

THE EFFECTS OF REGULAR EDUCATION INSERVICE TRAINING
ON TEACHER ANXIETY, KNOWLEDGE ABOUT INDIVIDUALIZATION,
AND ATTITUDES TOWARD MAINSTREAMING

BY

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DEDICATION

This dissertation is dedicated to the memory of my mother who taught me to value an education and instilled in me a love for teaching and children.

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The purpose of this study was to determine if inservice training designed to teach informal diagnosis and prescriptive programming (ID/PP) affects teacher anxiety, teacher attitudes toward mainstreaming handicapped students and knowledge about ID/PP. In addition, it investigated the relationships between teacher anxiety, teacher attitudes toward mainstreaming and knowledge about ID/PP.

The subjects in this study were volunteer regular education teachers whose schools belonged to a rural educational cooperative in a midwestern state. The 29 elementary teachers and 28 secondary teachers received 40 hours of training on ID/PP. In addition, they participated in a three-week practicum where they worked individually with students. This program incorporated 12 out of 16 concepts from best practice statements generated from a literature review focused on

inservice training. A randomly selected control group, consisting of 9 elementary teachers and 10 secondary teachers, did not participate in the training. In this pretest/post-test nonequivalent control group design, the Attitudes Toward Mainstreaming Scale, the Teaching Anxiety Scale and an ID/PP knowledge test were dependent variables.

The results of this study indicated that the anxiety level of teachers and the attitudes toward mainstreaming were not significantly influenced by participation in inservice training; however, differences in knowledge regarding informal diagnosis and prescriptive programming were noted. No strong correlations between teacher anxiety and teachers' attitudes toward mainstreaming nor teacher anxiety and knowledge regarding ID/PP nor teachers' attitudes toward mainstreaming and teachers' knowledge regarding ID/PP were indicated. Similarly, scores on various measures were not good predictors of each other. However, an analysis of years of teaching experience and number of credit hours completed in special education courses indicated that they were good predictors of teacher anxiety.

It was anticipated that the ID/PP training would have impact upon teacher attitudes and anxiety as well as their knowledge regarding ID/PP; this was not the case. Several explanations for this outcome are discussed. Future research in the area of inservice training addressing behavioral approaches to measuring attitudinal changes and different approaches to alleviate teacher anxiety would appear warranted based on this research.

CHAPTER 1

INTRODUCTION

Within the last eight years the right to education movement in the United States has made great strides. Landmark court decisions have lead our Congressional leaders to enact legislation providing for a free and appropriate education for all. Public Law (P. L.) 94-142, the Education for All Handicapped Children Act, became law on November 29, 1975. It is now mandatory that all handicapped children receive an education in the least restrictive environment.

Basically, least restrictive environment means that the handicapped student should be placed in the most beneficial learning situation for him/her; however, as much as possible handicapped students should be integrated into regular programs (Cole & Dunn, 1977). Least restrictive environment is sometimes referred to as mainstreaming. Mainstreaming refers to placing handicapped students into regular education programs, or the mainstream of education. The least restrictive environment for some handicapped students may be in the mainstream of education.

Students who previously have been isolated from the nonhandicapped now will be receiving an education with them. Thus, it is essential that the teachers who will be involved in the mainstreaming classes be given adequate preparation

so that they will be able to more effectively deal with the influx of this new population (Harvey, 1976; Saettler, 1976; Siantz & Moore, 1978; Turnbull & Turnbull, 1978).

Many teachers have expressed concern about being able to deal with exceptional students in regular classes (Alberto, Castricone & Cohen, 1978; Graham, Hudson, Burdg & Carpenter, 1980; Hudson, Graham & Warner, 1979; Rude, 1978; Voeltz, Bailey, Nakamura & Azama, 1979). Traditionally, inservice education has been utilized to correct deficits in teachers' skills (Schmid & McAdams, 1981). In recognition of the need for general educators to receive inservice training, the Division of Personnel Preparation of the Office of Special Education and Rehabilitation has established regular education inservice as one of its priorities (Harvey, 1976; Saettler, 1976).

Edelfelt (1974) expressed the opinion that inservice education in the past has been inadequate and ineffective. This is not surprising when one realizes that the field of inservice education is lacking a strong research base (Corono & Clark, 1978; Cruikshank, Lorish & Thompson, 1979; Rubin, 1978). Rubin (1978) indicated that few problems in education are in more need of an all-out effort at theory building based on research other than inservice education.

Most of the models suggested for use in inservice programs today are based on opinion rather than empirical evidence (Corono & Clark, 1978; Rubin, 1978). Educators have seen a need for inservice training and have started

providing it ignoring the absence of an empirical base on which to formulate effective practice.

Bensky, Shaw, Gouse, Bates, Dixon, and Beane (1980) reported that as compliance with P. L. 94-142 increases, reported stress from the tasks related to it increases. Furthermore, regular teachers identified diagnosis and assessment as the most stressful activities related to P. L. 94-142. Research investigating the effects of teacher anxiety and stress has revealed that it may have detrimental effects both on teachers and on their students (Coates & Thoresen, 1976; Keavney & Sinclair, 1978; Kyriacou & Sutcliffe, 1977).

Researchers have discovered that teacher attitudes and subsequent expectations can positively or adversely affect student achievement, teacher behavior and student behavior (Berryman, Neal & Robinson, 1980; Brophy & Good, 1970; Dole, Honack & Kefer, 1970; Good & Brophy, 1972; Gottlieb, Semmel & Veldman, 1978; Palardy, 1969; Rowe, 1969; Silberman, 1969). Since teacher attitudes are probably closely tied to the effectiveness of education of the handicapped, researchers have generally recognized the need to study teachers' attitudes toward mainstreaming (Reynolds & Greco, 1980).

In needs assessment studies conducted since passage of P. L. 94-142, teachers have been asked to indicate areas in which they feel they need additional training. Many teachers see individualization as an area where they need training. In at least four statewide studies, the ability to individualize

instruction has been identified as an area of need (Alberto et al., 1978; Graham et al., 1980; Hudson et al., 1979; Voeltz et al., 1979). To individualize their instructional programs, teachers need to have basic skills in identifying where a child is functioning (informal diagnosis) and be able to take that information and develop an instructional plan for the child (prescriptive programming). In Rude's (1978) study of the Comprehensive System of Personnel Development (CSPD) section of 1978 Annual Program Plans, programming was the top priority for needed training. Child evaluation procedures were ranked fourth in the highest priorities of needed training topics nationwide.

Research in the area of inservice education is needed. In particular, determining the effectiveness of inservice training which teaches individualization techniques to teachers through teaching informal diagnosis and prescriptive programming skills appears warranted. Attention should also be paid to the effects of training on areas which are known to influence the effectiveness of teachers, such as teacher anxiety and teacher attitude.

Statement of the Problem

The importance of inservice education for all instructional staff is recognized throughout the educational literature. This recognition is evidenced by articles in popular periodicals, textbooks, research studies and special publications (Childress, 1969). Although much has been written about inservice teacher education, the literature provides

little direction for persons responsible for making decisions regarding this segment of professional development. The problem is that there is a lack of definition, clear concepts, facts and conditional propositions (Cruikshank, Lorish & Thompson, 1979). For example, what impact inservice education has on various teacher attributes, such as teacher anxiety, has been a neglected topic. Indeed, there have been few controlled studies done in the area of inservice teacher education. In general, the practice of inservice education has not been guided by empirically derived evidence.

Purpose

The purpose of this study was to contribute to the establishment of best practices in inservice teacher education. Toward that goal two specific areas were evaluated. First, an inservice training program of regular teachers, which incorporated concepts based on 75% of identified inservice best practice statements, to teach informal diagnosis and prescriptive programming's effects on teacher anxiety and teachers' attitudes toward the mainstreaming of handicapped students was investigated. Second, teacher anxiety, teachers' attitudes toward mainstreaming handicapped students and knowledge about informal diagnosis and prescriptive programming were studied to determine if there were relationships among them.

Research Questions

The following research questions were germane to this study:

1. To what extent is anxiety level of teachers influenced by participation in inservice training?
2. To what extent are teachers' attitudes toward mainstreaming handicapped students influenced by participation in inservice training?
3. To what extent is teachers' knowledge regarding informal diagnosis and prescriptive programming influenced by participation in inservice training?
4. To what extent are teacher anxiety and teachers' attitude toward mainstreaming handicapped students related?
5. To what extent are teacher anxiety and knowledge regarding informal diagnosis and prescriptive programming related?
6. To what extent are teachers' attitudes toward mainstreaming handicapped students and teachers' knowledge regarding informal diagnosis and prescriptive programming related?

Assumptions

For the purposes of this research, the following assumptions were made:

1. That there is a difference between groups which do receive training in informal diagnosis and prescriptive programming and those that do not receive such training.
2. That the subjects that receive training and control group members are similar in teaching skills.

3. That the effectiveness of a training package can be measured.
4. That subjects in the experimental groups and the control group had the same needs for inservice training.

Definitions

For clarity, the following key terms which appear in this paper are applied according to these definitions:

1. Anxiety -- A state of being uneasy, apprehensive or worried about what may happen; misgiving (Webster's New World Dictionary, 1966). For purposes of this study, the operational definition of anxiety will be the score that subjects obtain on the Teaching Anxiety Scale (Parsons, 1973).
2. Attitude -- Teachers' attitude toward mainstreaming handicapped children is operationally defined as the subject's score on the Attitudes Toward Mainstreaming Scale (Berryman, Neal & Robinson, 1980).
3. Control Group -- A group of subjects who participate to offset the validity problems involved with using a pretest-posttest design. The purpose of this measurement control is to determine if differences in posttest scores are because the subjects completed the pretest.
4. Handicapped Children -- Children whose performances in school-related behaviors vary from the norm to the extent that special instruction, assistance,

and/or equipment are required. Children may be classified as exceptional because of intellectual, physical, and/or behavioral and/or sensory reasons. The term handicapped is more restrictive than the term exceptional in that it does not include the gifted (Meyen, 1978).

5. Knowledge -- Teachers' knowledge about informal diagnosis and prescriptive programming is operationally defined as the subject's score on the Informal Diagnosis and Prescriptive Programming Test (Midwest Regional Resource Center, 1975).
6. Mainstreaming -- The practice of educating handicapped children in regular classrooms and the provision of support services when necessary. The practice is gaining wide popularity in meeting educational needs of the mildly handicapped (Meyen, 1978).
7. Informal Diagnosis and Prescriptive Programming (ID/PP) -- A training package developed by the Midwest Regional Resource Center (MRRC). This 40 hour activity-based training package includes ten modules:
 1. Identifying the Problem
 2. Task Analysis
 3. Error Pattern Analysis
 4. Systematic Modifications
 5. Setting Priorities
 6. Behavioral Objectives
 7. Learning Methods

8. Task Analysis of Materials
 9. Matching Material Characteristics with Learner Characteristics
 10. Developing an Individual Educational Plan.
- For purposes of this study, ID/PP training includes a three-week practicum experience consisting of working individually with handicapped students.
8. Inservice Education -- All activities engaged in by the professional personnel during their service and designed to contribute to improvement on the job (Hass, 1957).
 9. Stress -- A positive or negative reaction occurring when there is a substantial perceived or real imbalance between environmental demand and the response capability of the individual (Selye, 1956).

Delimitations

This investigation included 76 regular classroom teachers from a rural environment in the midwestern United States. All teachers were from schools which belonged to a rural educational cooperative.

In this study, one type of inservice training was used. This activity-based inservice training included 40 hours of workshop experience and a three-week practicum. The workshop included lectures, demonstrations and readings, individual, small and large group activities and offered "hands-on" experience.

Limitations

One limitation of this study is that subjects who received the inservice training were volunteers. This limits the generalizability of the study to similar populations.

A second limitation of this study is the differences in trainers. Although the persons who conducted the inservice activities had specific training on how to conduct inservice training, differences in their facilitative styles and personalities could have effected the impact of the training package. Different trainers using the same training package may not have the same effect.

CHAPTER 2

REVIEW OF THE LITERATURE

This review of the literature begins with a discussion of a theory of stages of concerns of teachers which suggests there are differences between inservice and preservice teachers. Two attributes which affect inservice teachers' effectiveness are then discussed, teacher anxiety and teacher attitudes. Finally, a critical review of inservice education literature which supported 16 best practice statements is presented.

Stages of Concerns of Teachers

Corono and Clark (1978) point out that we will receive the dividends we expect to get from inservice training only when it is specifically designed to serve the system of which it is a part. They point out that most research and development efforts in teacher education have been aimed at pre-service practice.

Why is it important to look at preservice teacher education differently? One reason for this may be that inservice teachers have different concerns than preservice teachers.

In the 1960's, Francis Fuller began looking at the differences between preservice and inservice teachers due to the widespread opinion that education courses are not relevant to the needs of teachers. She proposed that preservice

teachers were not prepared to benefit from the courses being taught. As she phrased it, "education courses may well be answering quite well questions students are not asking" (Fuller, 1969, p. 208).

Fuller (1969) piloted her research with two studies involving student teachers in group counseling sessions. The first study involved six student teachers who met two hours each week for eleven weeks with a counseling psychologist. The following semester, eight students were co-counseled by two counseling psychologists. The counseling sessions were taped and then typescripts were made from the recordings. Two judges categorized the statements made into seven categories. Fuller concluded from the results that student teachers were concerned mostly with themselves during the first part of their experience. Toward the end of their student teaching; however, they began to shift to be more concerned with pupils.

In the second study, 29 student teachers were asked at two-week intervals to write, "what you are concerned about now?" (Fuller, 1969, p. 214). All of the subjects expressed concerns about self. None of the subjects were concerned primarily with what pupils were learning.

In a large (N=736), two-phase study of strain in teaching and emotional problems of teachers in England, Gabriel (as cited in Fuller, 1969) surveyed experienced and inexperienced teachers. He compared their problems and satisfactions. Inexperienced teachers saw criticism from superiors and

maintaining discipline as problems. They reported receiving satisfaction from praise from inspectors and holidays. Experienced teachers were significantly ($p \geq .01$) less concerned with discipline and criticism. They were significantly ($p \geq .05$) more concerned with slow progress of pupils. Furthermore, experienced teachers reported receiving satisfaction from success of former pupils. Fuller (1969) interpreted these results as supporting her findings.

Based on her clinical observations and research, Fuller (1969) proposed three phases of concerns of teachers. The first phase was pre-teaching phase of non-concern that encompassed education majors who rarely had specific concerns related to teaching. The second phase was an early teaching phase of concern with self. This second phase consisted of covert concerns (i.e., How adequate am I?) which are most frequently experienced by student teachers and beginning teachers. The third phase was a late concerns phase characterized by concern with pupils. Concerns in this phase focused on pupil learning and teacher professional development and were generally concerns of experienced, superior teachers.

Research by Treese (1971) tends to support the idea that preservice teachers and inservice teachers may have different concerns. Treese (1971) used 46 preservice and 21 inservice teachers to study the effects of microteaching on teaching attitudes, anxieties, and values. The Taylor Manifest Anxiety Scale (Taylor, 1953), the Minnesota Teacher Attitude Inventory, and the Allport Vernon Lindzey Study of Values

were used as dependent variables. The treatment consisted of seven weeks of microteaching involving set induction, questioning of three orders, varying the stimuli, and closure skills. After the microteaching sessions attitude scores were significantly raised for preservice teachers but not inservice teachers. Preservice teachers' anxiety scores were significantly lowered but inservice teachers' scores were not. Scores on the values scale were significantly increased for the inservice teachers but were not affected for the preservice teachers. On all three dependent variables, preservice teachers reacted differently to the microteaching than inservice teachers.

While conducting research to validate the Teaching Anxiety Scale (TCHAS), Parsons (1973) found evidence to support the hypothesis that preservice and inservice teachers have different concerns. She compared the mean scores on the TCHAS for 192 inservice teachers ($\bar{X}=60.51$) with the scores for 407 preservice teachers ($\bar{X}=45.06$). The preservice teachers were significantly more anxious than the inservice teachers. In addition, scores on the TCHAS significantly decreased for 130 preservice teachers after their student teaching experience. Scores on the Manifest Anxiety Scale (Taylor, 1953), however, did not significantly change after the student teaching experience. Parsons interpreted this difference to support the concept that the TCHAS measured teaching anxiety distinctly differently from general anxiety. She believed her data were consistent with Fuller's findings.

To test Fuller's theory of phases of teacher concerns, Fuller, Parsons and Watkins (1974) examined Teacher Concern Statements (TCS) from 265 inservice and 994 preservice teachers. The concerns expressed on the TCS were categorized into six categories; three early concerns and three late concerns. These categories were (a) concerns about role, (b) concerns about adequacy, (c) concerns about being liked or liking, (d) concerns about teaching, (e) concerns about pupil needs, and (f) concerns about educational improvement. Content analysis of the TCS revealed that preservice teachers were more concerned about benefit to self and inservice teachers were more concerned about benefits to pupils. Teachers tended not to have both early and late concerns simultaneously. Of the total sample, 75% had concerns in either the early or late stages, while only 25% had concerns in both stages. However, Fuller, Parsons, and Watkins believe on the basis of their clinical observations that in stressful situations, survival or self-concerns of teachers tend to increase.

Fuller (1974) used the results of her research (Fuller, Parsons & Watkins, 1974) to refine her phrases of concerns of teachers into three stages. She proposed that developmentally, teachers move from stages of concern about self, to concerns about the teaching task, and finally to concerns about impact they have on pupils.

Based on Fuller's teacher concerns theory, it appears reasonable to propose that research in teacher education in general should not be applied to inservice teachers the same

as it is applied to preservice teachers. Research specific to inservice training should be designed and its results utilized to enhance inservice training practices. In general, the goal of inservice education is to improve or change teachers' attitudes, knowledge, skills or behaviors to enhance teacher effectiveness. There are many attributes which affect inservice teachers. Two of these attributes are teacher anxiety and teacher attitudes.

Teacher Anxiety

Several studies have investigated the effects of inservice teachers' anxiety. In 1973, Doyal and Forsyth investigated the relationship between teacher and student anxiety levels. The subjects were 234 third grade students and their 10 teachers. The students' scores on the Test Anxiety Scale for Children (Sarason, Lighthall, Davidson, Waite & Ruebush, 1960) were correlated with the teachers' scores on the Manifest Anxiety Scale (Taylor, 1953). There was a positive correlation ($r=.65$) between teacher anxiety and the students' test anxiety. These results suggest that the anxiety level of teachers does influence the test anxiety level of their students.

Moskowitz and Hayman (1974) studied first-year, typical and "best" teachers in three junior high schools. The "best" teachers were selected by the students. "Best" was defined as, " . . . liked the teacher a lot and you learned a lot from this teacher" (Moskowitz & Hayman, 1974, p. 224). The Flint interaction analysis system (Moskowitz, 1967) and anecdotal

records were used to investigate teacher behaviors. "Best" teachers were determined to be much more relaxed and at ease than the typical and first-year teachers.

Koon (1971) used direct behavioral observation to determine the effects of teacher anxiety, as measured by the Test Anxiety Questionnaire (Mandler & Sarason, 1952) and teacher expectations on teacher-student interactions. Koon found that, unlike low anxiety teachers, high anxiety teachers used significantly less task-oriented behavior with students expected to be competent than those they expected to be incompetent. High anxiety teachers also used fewer positive reinforcements.

Washburne and Heil (1960) selected fifty-five third, fourth, and fifth grade teachers from nine public schools to investigate what characteristics of teachers affect childrens' growth. The students of these teachers were given the Stanford Achievement Test and the Ohio Social Acceptance Scale at the beginning and end of the school year. At the end of the school year, the students were given the Otis Group Intelligence Test, Form AS and the Assessing Childrens' Feelings instrument. The teachers were observed and rated on the Teacher Observation Scale six to eight times during the school year. In addition, the teachers completed the Teacher Education Examination and the Manifold Interest Schedule at the end of the school year. The teachers were grouped into three groups: the turbulent person, the self-controlling person, and the fearful person. Results of this study verified

the major hypothesis that different kinds of teachers get varying amounts of achievement from students. The self-controlling teachers get the most achievement from their students. The fearful teachers got the least achievement from their students. The fearful teacher was described as anxious and variable in behavior. In addition, the fearful teacher was reported to induce anxiety in pupils and to arouse defensive reactions in them.

Four studies have been discussed here that indicate that for inservice teachers, teacher anxiety does affect their students. Teacher anxiety has been shown to affect student anxiety (Doyal & Forsyth, 1973), teacher-pupil interactions (Koon, 1971), teacher effectiveness as perceived by students (Moskowitz & Hayman, 1974), and student achievement (Washburne & Heil, 1960).

In addition to these studies using inservice teachers, several investigators have looked at the effects of preservice teachers' anxiety. Kracht and Casey (1968) found that student teacher anxiety correlated negatively with teacher warmth. According to Petrusick (1966), high anxiety student teachers gave their pupils less verbal support, engaged in more hostile speech and behavior, and had more disruptive pupils than low anxiety student teachers. More anxious student teachers were reported by Clark (1972) to give lower grades than less anxious student teachers. Mattsson (1974) found that teacher effectiveness ratings by pupils were highest for low anxiety student teachers. Although these last four

studies involved preservice teachers, they lend support to the supposition that teacher anxiety does affect students.

Teacher Attitudes

According to Haring (1957), "the attitudes and understandings that teachers have about exceptional children influence the intellectual, social and emotional development of these children" (p. 103). In recent years, much research has been conducted to investigate the effects teachers' attitudes and subsequent expectations have on teacher-student interactions, classroom climate, and student achievement.

Teacher Expectancies

In 1931, W. I. Thomas (cited in Palardy, 1969) wrote, "if men define . . . situations as real, they are real in their consequences" (p. 370). This idea is what has become known as the self-fulfilling prophecy. The self-fulfilling prophecy is based on two assumptions. First, that when you make a definition about a situation, you are also making a prophecy about it. Second, that making a prophecy about a situation creates the conditions through which the prophecy is realized (Palardy, 1969). There is evidence that the self-fulfilling prophecy phenomenon may be occurring in educational settings.

Rosenthal and Jacobson (1968) pioneered the research on the effects of teacher expectancies. A randomly selected group of elementary students were described to their 18 teachers as likely to show marked intelligence gains during the school year. An intelligence test was given at the beginning, middle and end of the school year to the experimental

and control groups. The experimental group showed a significantly higher gain on the intelligence test than the control group. Although there has been much criticism of this study (Claiborn, 1969; Jensen, 1969; Snow, 1969; Thorndike, 1968), it was the impetus for research on the effects of teacher expectancies and self-fulfilling prophecies.

Although investigators have induced expectancies in some research studies, the most relevant research in the expectancy area comes from investigations involving naturally occurring expectancies and their effects on the classroom environment (Brophy & Good, 1974; Curran, 1977). One of the first studies to utilize naturalistic expectancies was conducted by Palardy (1969). In the middle of the school year, forty-two first grade teachers completed and returned a questionnaire. Based on one item designed to elicit teacher beliefs about reading success of first grade boys, teachers were divided into three groups. Results of the Ginn Pre-Reading Test, which had been administered in late September, indicated there were no differences in reading readiness between the girls and the boys at the beginning of the school year. Toward the end of the school year the teachers administered the reading section of the Stanford Achievement Test to their 107 students. These scores indicated that boys whose teachers expected them to perform less well than girls did obtain lower scores. Likewise, higher achievement was demonstrated by boys whose teachers expected them to perform as well as the girls.

Prior to administering an intelligence test, Dole, Honack and Kefer (1970) had teachers estimate their students' intelligence quotients. Boys' intelligence quotients were systematically under estimated, while girls' intelligence quotients were systematically over estimated. At the end of the school year, reading achievement scores indicated that students whose intelligence quotients had been over estimated had achieved more than one would predict based on their true intelligence quotients. The reading scores for students whose intelligence quotient had been under estimated were lower than would be predicted based on their true intelligence quotients. In addition, the students of teachers who tended to under estimate intelligence scored lower on the reading achievement test than students of teachers who tended to over estimate intelligence.

Rowe (1969) investigated teacher expectancy effects on wait time. She requested that twelve teachers identify the top five and lowest five students in their classes. During three science and three mathematics classes, the wait time after teacher questions was sampled. The teachers allowed significantly less wait time for the lowest students. The less able students had to respond more quickly than more able students or lose their opportunity to answer the question.

Brophy and Good (1970) investigated the effects teacher expectancies have on student-teacher interactions. The study occurred in a school where the classes were formed by grouping for homogeneity on readiness and achievement scores. Four

first grade teachers were asked to rank their students in the order of their achievement. In each class, the three highest girls and the three highest boys on the list, along with three boys and three girls low on the list were selected for observational study. Two observers using an observation system developed to investigate only the dyadic contacts between the teacher and an individual child observed two afternoon and two morning sessions of each class. The teachers were naive to the true purpose of the study. The results indicated that teachers were more likely to accept poor performance from low expectation students. Teachers demanded better performance for high expectation students, awarded them significantly more praise, and gave them significantly less criticism for both behavior and incorrect answers.

Not all studies involving effects of teacher expectancies have utilized an expectancy/self-fulfilling prophecy paradigm. Results of these investigations, however, also support the effects of teacher attitudes.

Silberman (1969) investigated the ways and extent teachers attitudes toward their students are revealed in the classroom behavior of the teacher. Subjects were ten third grade teachers from five suburban communities. Teachers were interviewed to determine toward which students they felt attachment, concern, indifference or rejection. These four students and two randomly selected control students were then observed for 20 hours. The students were then interviewed to determine whether they or each of the other five students received

more teacher contact, positive and negative evaluations, and acquiescence. Results indicated that teacher attitudes significantly affected the distribution of contact, positive and negative evaluations, and acquiescence. In addition, five out of eight correlations between students' predictions and actual observations and between other students' predictions and actual observations were significantly positive. Apparently, both recipient students and other students were aware of behavioral expressions of their teachers' attitudes. Silberman concluded that teachers' actions which express their attitudes significantly alter the daily classroom experience of recipient students.

Good and Brophy (1972) replicated and extended the work by Silberman (1969). The subjects were nine first grade classroom teachers. The teachers were naive to the true purpose of the experiment. In September each teacher was asked to rank their students in order, according to the levels of achievement expected. The Brophy-Good dyadic interaction observation system (Brophy & Good, 1970) was used to make 16 observations of 2½ hours each. After three months of classroom observations had been completed, the teachers completed a questionnaire to determine for which students they felt attachment, concern, indifference or rejection. The results of this study supported Silberman's (1969) contention that teachers' attitudes toward students correlate with differential teacher behavior.

Gottlieb, Semmel and Veldman (1978) correlated teachers' perceptions of 324 mainstreamed educable mentally retarded childrens' academic competence and misbehavior with peers' sociometric ratings. To obtain peers' sociometric ratings, a sociometric scale was administered to entire classes of students while the mainstreamed student was present. Peer perceptions of behavior were obtained through a questionnaire. The Teacher Rating Scale was used to obtain teachers' perceptions of the mainstreamed student's behavior. Results of this study indicated that teachers' perceptions of the mainstreamed student correlated significantly with peers' sociometric responses. The amount of contact teachers and peers had with the retarded student did not relate significantly with social status. The authors concluded that a powerful influence over the social status of the retarded children in the regular classroom is the teachers' perceptions.

Curran (1977) investigated the influence of teachers' tolerance for behaviors which characterize emotionally disturbed students on their expectations for mainstreaming candidates who demonstrated these behaviors. A five-part questionnaire was completed by 289 subjects. The questionnaire assessed demographic characteristics, the teacher's tolerance for behaviors, and experiential background. A fictitious psychological report which described a child demonstrating either a conduct disorder or a personality problem was included. The final part of the questionnaire was the Mainstreaming Expectancy Scale which the teacher completed

in regard for the students described in the fictitious reports. Results of this study suggest that a teacher's tolerance for the behaviors the mainstreaming candidate demonstrated had a significant effect on their expectations. It was also found that years of teaching experience, courses completed in special education and previous contact with handicapped students were not good predictors of a teacher's expectations for mainstreaming candidates.

Several other studies have investigated factors which influence the teacher-student relationship and support the concept of a teacher expectancy phenomenon. Becker (1952), Mackler (1969), and Rist (1970) have established the prejudicial effects of social class on teacher expectancies. Coates (1972), Data, Schaefer and Davis (1968), and Rubovits and Moehr (1973) have studied the negative effects of race on teacher expectancies. Adams and Cohen (1974) and Algozzine (1976) have confirmed that perceived facial attractiveness influences teacher expectancies.

The research in this section supports the concept that teachers are influenced by the expectancies and attitudes they have regarding the students they teach. Negative attitudes and expectations have a detrimental effect on the teacher-student relationship. In addition, negative attitudes of educators toward mainstreaming handicapped students may cause a self-fulfilling prophecy phenomenon to occur.

Effects of Contact on Teacher Attitude

Allport (1954) proposed as a part of his theories regarding attitude formation towards minority groups that contact contributes to a reduction of prejudice. Several investigators have conducted research which supports this theory in regard to attitudes toward the handicapped.

Effron and Effron (1967) used a 70 item questionnaire to study the structure of attitudes toward mental retardation and the educably mentally retarded. Respondents were primarily inservice and preservice teachers in special and regular education. Special education teachers were the only group that differed from the others in their acceptance of intimate contact with the retarded. The authors interpreted their findings to support the hypothesis, " . . . that personal contact is probably the only way of changing the more personal and less intellectual facet of attitudes" (Effron & Effron, 1967, p. 107).

Wechsler, Suarez and McFadden (1975) investigated teachers' attitudes toward the education and emotional adjustment of physically handicapped students by administering a questionnaire to 547 teachers. Attitudes toward the education of physically handicapped students and their relationship to personal background of teachers were examined. The background variable found to be most clearly and consistently associated with the teachers' attitudes was previous experience with handicapped children.

Shotel, Iano and McGettigan (1972) studied the effects of a resource room program on the teachers' attitudes toward handicapped children. Questionnaires were completed by 128 regular classroom teachers at the beginning and end of the school year. The experimental group was composed of the teachers from three schools where self-contained special education classes were disbanded and resource rooms established. The control group members were teachers from three schools where the self-contained classes were retained. The schools were matched for size and student population. The findings of this study indicate that integrating the handicapped into regular classes had no significant effects on teachers' attitudes toward learning disabled students, positive effects on teachers' attitude toward emotionally disturbed students, and negative effects on teachers' attitudes toward educably mentally retarded students.

Haring (1956) investigated the effects of thirty hours of inservice training which included fifteen hours of small group discussions on teacher attitudes. Teachers from four schools were pretested and posttested with four tests designed to measure knowledge and acceptance of exceptional children, and the personality characteristics of the teachers. Results of the study indicated that the training was effective in increasing knowledge about exceptional children. Teachers from two schools showed no significant changes in attitudes. However, teachers from the other two schools showed significant changes in attitudes. The two schools that became

more accepting in their attitudes had significantly more exceptional children in the classrooms. Haring concluded that inservice programs designed to change attitudes should include experiences in working with exceptional students. Knowledge alone was not enough to modify teachers' attitudes.

Based on the results of the research reported here, inservice training programs which are designed to influence teacher attitudes should include opportunities for experiences in working with handicapped students. Because of the negative attitudes and expectations generally held by regular educators, if training programs do not promote attitudinal changes, the handicapped child has less of a chance of being successfully mainstreamed (Curran, 1977). A significant amount of research has been conducted regarding inservice training; a critical analysis of that work indicated that few of the results are generalizable to other settings, that there is a lack of valid data, that goals and objectives have been unclear, and that inservice is usually poorly planned. Regardless, the literature on inservice training does offer some guidelines for best practice.

Inservice Education

References for this review of the literature were obtained from several sources. These sources included the Current Index of Journals in Education (CIJE), an ERIC search, textbooks, reference lists from articles, published reviews of the literature and an annotated bibliography (National Council of States on Inservice Education, 1976).

Best Practices

Some inservice education is considered effective by participants and trainers, some is not. What are some of the elements of effective inservice training? How can a trainer increase his/her chances of conducting inservice training that will be considered effective? To answer these questions, a review of literature regarding best practices for inservice education was conducted. The following criteria were established regarding which articles and reports to include in this section.

Only literature written since 1957 was reviewed. All information regarding inservice education outside of the United States was eliminated. Only opinion articles which were substantiated with reviews of the literature or a theoretical model were included. All articles endorsed best practices, made recommendations, or drew conclusions about effective inservice.

Several steps were taken to arrive at a list of best practice statements. First, after reviewing literature on inservice education, thirteen articles and reports were determined to meet the criteria for inclusion and were analyzed in depth. Next, best practice statements were listed on a chart as they were encountered in the literature. Checks were used to indicate which articles were in agreement with each of the basic statements. After all 13 articles were reviewed, the check marks for each statement were totaled. All statements with less than four checks, in other words,

mentioned in less than four articles, were eliminated. As a result, a list of 16 statements of best practice was obtained. The statements generated are listed in Table 1. Table 2 indicates which authors endorsed which best practice statements.

These articles used several techniques to generate recommendations and best practice statements. Two articles were based on research reviews, four on literature reviews and three on survey research. Two lists were the result of group opinions and two were from opinion articles based on models or previous literature reviews. Tables 3 and 4 provide a list of the studies, procedures the authors used to arrive at the best practice endorsement, the product the authors generated, criticisms of the article and best practices endorsed. For a listing of the criticisms of this literature, see Table 5.

Best Practice Statements

Effective inservice education is usually school-based rather than college-based. This practice was mentioned in eight of the thirteen selections reviewed (Andrews, 1980, Group I; Brimm & Tollett, 1974; Hutson, 1979; Johnson, 1975; Lawrence, 1974; Siantz, in press; Texas Education Agency, 1978; Zigarmi, Betz & Jensen, 1977). In 1974, Lawrence conducted a comprehensive review of research related to inservice education of teachers. In his review of 97 studies, he found that school-based inservice programs concerned with complex teacher behaviors tended to have greater success than college-based programs dealing with complex behaviors. He

Table 1

Best Practice Statements

1. Effective inservice is usually school-based rather than college-based.
2. Evaluation should be built into inservice activities.
3. Individualized programs are usually more effective than those using the same activities for the entire group.
4. Inservice should be activity-based.
5. Demonstrations, supervised practice and feedback are more effective than having teachers store up ideas and behavior for a future time.
6. Activities which are a general effort of the school rather than "single-shot" programs are more effective.
7. Participants should help plan the goals and activities of inservice training.
8. Rewards or reinforcements should be built-in to an inservice program.
9. Participants should be able to relate learnings to their back-home situation.
10. Inservice should be offered at convenient times for the participants.
11. Trainers should be trained specifically in how to conduct inservice training and inservice education in general.
12. Administrators should be involved with the training and fully support it.
13. Goals and objectives should be clear and specific.
14. Inservice should be planned in response to assessed needs.
15. Inservice should be directed at changing teachers' behaviors not students' behaviors.
16. Inservice should be voluntary rather than mandatory.

Table 2
Best Practices Endorsed

	Type of Article	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Allshouse & Ondell 1979	Lit. Review		x	x	x	x		x	x						x	x	
Andrews, Group I 1980	Group Opinion					x		x	x								
Andrews, Group II 1980	Group Opinion	x										x					
Brimm & Tollett 1974	Survey Research							x	x				x				
Havelock & Havelock 1973	Opinion													x			
Hutson 1979	Lit. Review		x					x	x								
Johnson 1975	Group Opinion	x						x	x				x				
King, Hayes & Newman 1977	Survey Research		x						x	x							x
Lawrence 1974	Research Review	x		x	x	x									x		
Lippert & Fox 1971	Opinion			x				x					x				x
Slantz 1979	Lit. Review		x					x	x								
In Press	Lit. Review							x	x				x		x		
Tx. Ed. Agency 1978	Review	x	x	x	x	x											
Wilen & Kindsvatter 1978	Research Review		x					x									
Zigarmi, Batz & Jensen 1977	Survey Research	x		x				x									
TOTALS		8	8	7	4	5	4	14	7	6	5	5	6	6	8	5	4

Table 3

Best Practices of Inservice Education
Literature and Research Reviews

Author	Procedures for Inclusion	Product	Criticisms*	Best Practices Endorsed**
Allshouse & Ondell, 1979	General literature review, procedures for arriving at conclusions not specified.	Concepts critical for effective inservice	Doesn't specify procedures; (1) Doesn't specify group applies to (2)	2, 3, 4, 5, 7, 8, 9, 14, 15
Hutson 1979	General literature review, criteria for inclusion of statements were: empirical support, cogency of argument, and repetition in the literature	Statements of Best Practice	Doesn't specify Groups applies to (2)	1, 2, 6, 7, 8, 11, 12, 13, 14, 15
Lawrence 1974	Review of 97 research studies; criteria for inclusion: College or school-based inservice to improve competencies of teachers and have experimental, quasi-experimental or low-control design that ensured some validity	Patterns of effective inservice	Doesn't specify Groups applies to (2)	1, 3, 4, 5, 6, 7, 15
Siantz In Press	General literature review, criteria for inclusion included supported by research and literature	Statements of Best Practice	Doesn't specify procedures; (1) Doesn't specify Groups applies to (2)	1, 2, 6, 7, 8, 11, 12, 13, 14, 15
Texas Ed. Agency, 1978	General literature review, procedures for arriving at conclusions not specified	Principles underlying effective inservice	Doesn't specify procedures; (1) Doesn't specify group applies to (2)	1, 2, 3, 4, 5, 6, 7, 8, 13, 14, 15

* See Table 5.

** See Table 1.

Table 3 - extended

Author	Procedures for Inclusion	Product	Criticisms*	Best Practices Endorsed**
Wilen & Kindsvatter 1978	Research review; reviewed 5 studies and guidelines synthesized from studies. Criteria for inclusion not specified	Guidelines to improve inservice training	Doesn't specify groups applies to (2); Doesn't tell how selected studies to review (3)	2, 7, 9, 10, 13, 14

* See Table 5

** See Table 1

Table 4

Survey Research, Group Opinions & Opinions

Author	Subjects	Procedures	Results	Criticisms	Best Practices
Andrews 1980	Group 1 32 classroom teachers, K-5	Group consensus of participants on recommendations for effective inservice; After 2 yrs. school-based inservice with college consultants	List of recommendations for effective inservice	Doesn't specify procedures to arrive at conclusions (1) Doesn't specify group applies to (2)	1, 5, 7, 9, 10
Andrews, 1980	Group 2 College consultants, unknown number	Group consensus of college consultants on recommendations for inservice; after 2 yr. school-based inservice with college consultants	List of recommendations	Doesn't specify procedures (1); Doesn't specify group applies to (2)	7, 11, 12
Brimm & Tollett 1974	646 teachers from TN, stratified proportional sample to include 2% of teachers	Survey research 65% return rate 34 item scale questionnaire on attitudes toward inservice	Substantiated retention that inservice is poorly planned, inadequately executed & lacks proper evaluation procedures	Doesn't specify group applies to (2)	1, 2, 3, 7, 9, 12, 14

Table 4 - extended

Author	Subjects	Procedures	Results	Criticisms	Best Practices
Havelock & Havelock 1973	Opinion	Based on a model for inservice		Doesn't specify group applies to (2)	2, 4, 5, 7, 8, 11, 13
Johnson 1975	87 participants	Group lists were compiled from participant attending workshop on rethinking inservice	List of recommendations	Doesn't specify procedures (1); Doesn't specify group applies to (2)	1, 3, 7, 8, 10, 12, 16
King, Hayes & Newman 1977	1300 inservice programs	Survey re-creations of programs were analyzed	Arrived at 7 distinct processes common to successful programs; list of recurring descriptors for successful programs	Doesn't specify procedures to arrive at conclusions (1); Doesn't specify group applies to (2)	2, 7, 8, 9, 10, 13, 14, 16
Lippett & Fox 1971	Opinion chapter in text	Based on literature review by author earlier in text		Doesn't specify group applies to (2)	3, 7, 11, 12, 16
Zigarmi, Betz & Jensen 1977	1239 teachers from SD random sample representing every school	Survey re-search questionnaire of inservice received & usefulness of those activities	Some of the methods used most often were replies to (2); seen as less helpful; 2-week workshop one considered most helpful	Doesn't specify if group applies to (2); Doesn't specify if return rate (4)	1, 3, 7, 10, 14, 16

Table 5

Criticisms of Best Practice Literature

1. Specific procedures used to arrive at conclusions/recommendations not included.
2. Does not answer the question, do the conclusions apply equally to inservice programs involving urban, suburban, rural, secondary, and elementary teachers (Cruikshank et al., 1979).
3. Specific procedures for determining studies to include not provided.
4. Survey research that does not specify return rate.

also suggested that teacher attitudes are more likely to be influenced by school-based inservice education.

Brimm and Tollett (1974) conducted a statewide study in Tennessee to ascertain teacher attitudes toward inservice education programs using a questionnaire. Fifty-five percent of the teachers surveyed preferred that inservice activities be conducted in their own school setting.

In 1975, a two-and-a-half-day workshop to reconceptualize inservice education was sponsored by the National Education Association (NEA). The 87 participants at that workshop generated recommendations for inservice (Johnson, 1975). One of the recommendations of that group was that inservice education should be field-based.

Evaluation should be built into inservice activities.

This practice was mentioned in eight of the thirteen selections reviewed (Allshouse & Ondell, 1979; Brimm & Tollett, 1974; Havelock & Havelock, 1973; Hutson, 1979; King, Hayes & Newman, 1977; Siantz, in press; Texas Education Agency, 1978; Wilen & Kindsvatter, 1978). Havelock and Havelock (1973) developed 15 summary statements on principles of good training. They proposed that these statements could serve as a guide and checklist for the trainer or training program developer. One statement stresses the importance of evaluation in training.

After reviewing material on the development of inservice education, Allshouse and Ondell (1979) identified ten components which contribute to effective inservice education

and emphasize active participation. Evaluation of inservice was included in their discussion. In Brimm and Tollett's (1974) survey, 96% of the respondents agreed to a statement about development of evaluation for inservice programs.

Individualized programs are usually more effective than those using the same activities for the whole group. This practice was mentioned in seven of the thirteen selections reviewed (Allshouse & Ondell, 1979; Brimm & Tollett, 1974; Johnson, 1975; Lawrence, 1974; Lippett & Fox, 1971; Texas Education Agency, 1978; Zigarmi et al., 1977). Lawrence (1974) found that inservice education programs that have differentiated training experiences for different teachers are more likely to accomplish their objectives than are programs that have common activities for all participants. Of the 97 studies he reviewed, 43 used an individualized approach. Of those, 80% had significantly positive outcomes, 10% showed no significant differences and 10% had mixed results. Of the 54 studies which used common activities, 68% had significant positive outcomes, 24% showed no significant differences and 8% had mixed results.

Teachers apparently agree with the concept of individualization of inservice. In Brimm and Tollett's (1974) survey of teachers, 94% indicated agreement with the statement that inservice programs must include activities which allow for the different interests which exist among individual teachers.

One of the recommendations from the 1975 NEA workshop was that "inservice education should reflect the same principles that educators endorse for students--e.g. individualized instruction and freedom to choose among alternatives" (Johnson, 1975, p. 73). Allshouse and Ondell (1979) also endorsed the concept of individualization in inservice education.

Inservice should be activity-based. This practice was mentioned by four of the thirteen selections reviewed (Allshouse & Ondell, 1979; Havelock & Havelock, 1973; Lawrence, 1974; Texas Education Agency, 1978). Adults, like children, learn by doing; hence, inservice education which is structured to provide active participation of teachers rather than passive acceptance of the content is more likely to produce change (Allshouse & Ondell, 1979). In Lawrence's (1974) review, 66 studies used active roles. Eighty-three percent of these had significant positive outcomes, 12% showed no significant difference and 5% had mixed results. Of the 31 studies in which teachers assumed receptive roles, only 51% had significant differences, 29% showed no significant differences and 20% showed mixed results.

Havelock and Havelock (1973) indicated that training experiences should have the power to capture and hold the attention of trainees. They further suggest that this usually means the trainees need to actively use many of their senses and behavioral skills in the experience.

Demonstrations, supervised practice and feedback are more effective than having teachers store up ideas and

behavior for a future time. This practice was mentioned in five of the thirteen selections reviewed (Allshouse & Ondell, 1979; Andrews, 1980; Havelock & Havelock, 1973; Lawrence, 1974; Texas Education Agency, 1978). Continuous and ongoing feedback to participants appears to be an essential part of effective inservice (Havelock & Havelock, 1973; Allshouse & Ondell, 1979). Looking at the studies reviewed by Lawrence (1974), 61 included trial and feedback. Of these, 84% showed significant positive outcomes, 10% showed no significant differences and 6% indicated mixed results. In 36 of the studies, teachers were expected to store ideas and behaviors for a future time and no feedback was provided. Fifty-five percent of these studies showed significant positive outcomes, 31% showed no significant differences, 14% showed mixed results.

Activities which are a general effort of the school rather than "single-shot" programs are more effective. This practice was mentioned in four of the thirteen selections reviewed (Hutson, 1979; Lawrence, 1974; Siantz, in press; Texas Education Agency, 1978). In his review, Lawrence (1974) found that inservice activities which are linked to a general effort of the school (programmatic) are more effective than "single-shot" programs. Eighteen of the programs reviewed used a programmatic approach--94% were successful and 6% had mixed results. Of the 79 studies which used a "single-shot" approach--68% had positive outcomes, 22% had no significant differences and 10% reported mixed results.

Participants should help plan the goals and activities of the inservice training. This practice was the only one endorsed in all 13 selections reviewed. At the NEA workshop, the participants recommended that inservice should be planned by the people affected (Johnson, 1975). Havelock and Havelock (1973) stress the importance of including representative of trainees in the planning of training events.

Allshouse and Ondell (1979) suggest that it is critical for teachers to be involved in the identification and organization of training activities. In Brimm and Tollett's study (1974), an overwhelming majority (93%) of the respondents stated that teachers need to be involved in the development of purposes and activities for inservice programs.

Twenty-one of the 97 studies reviewed by Lawrence (1974) used this approach, 76 studies did not. For the 21 studies letting participants help in planning and choosing activities, 95% of the programs had significant positive outcomes. For the 76 studies not utilizing this approach, only 67% had significant positive outcomes.

Rewards or reinforcements should be built-in to an inservice program. This practice was mentioned in seven of the thirteen selections reviewed (Allshouse & Ondell, 1979; Havelock & Havelock, 1973; Hutson, 1979; Johnson, 1975; King et al., 1977; Siantz, in press; Texas Education Agency, 1978). Havelock and Havelock (1973) endorse the use of reinforcement in inservice training. Reinforcement or reward for appropriate response is one of the oldest and most

well-founded principles of learning in animals and humans. Inservice training designers should be continuously conscious of this principle and should look for times, places, and situations in which effective positive reinforcements can be applied. According to Allshouse and Ondell (1979), college credit, extra pay, and released time have all proven valuable inducements for teachers to participate in inservice activities.

Participants should be able to relate learnings to their back-home situation. This practice was mentioned in six of the thirteen selections reviewed (Allshouse & Ondell, 1979; Andrews, 1980; Brimm & Tollett, 1974; Havelock & Havelock, 1973; King et al., 1977; Wilen & Kindsvatter, 1978). Ninety percent of the teachers in the Brimm and Tollett (1974) survey agreed to this statement, "one of the most important ways to judge the effectiveness of an inservice program is whether the teacher uses the results of the training in his classroom" (p. 252). Ninety-four percent of the teachers felt the real test of an inservice program is whether it helps the teacher to cope with his professional tasks more successfully; 90% felt the primary purpose of inservice is to upgrade the teacher's classroom performance; and 66% agreed with the statement that inservice education should relate directly to problems encountered in the classroom. Allshouse and Ondell (1979) state that:

the purpose of inservice education is to impart skill and information with intended carryover into the classroom or school. If the program of inservice is not designed and executed in such a way that the results

can be applied and used by participants, the acquisition of knowledge or increase of awareness of new developments in the field will effect little change in behavior. (p. 7)

Havelock and Havelock (1973) stress that transfer of inservice objectives to the classroom must be accomplished before any inservice program may be deemed successful.

c) Inservice should be offered at convenient times for the participants. This practice was mentioned in five of the thirteen selections reviewed (Andrews, 1980, Johnson, 1975; King et al., 1977; Wilen & Kindsvatter, 1978; Zigarmi et al., 1977). The consensus of investigators was that inservice activity should be built into the regular school day if possible. If not, then care should be taken to schedule the activity at times convenient and attractive to the teachers.

Trainers should be trained specifically in how to conduct and plan inservice in general. This practice was mentioned in five of the thirteen selections reviewed (Andrews, 1980; Havelock & Havelock, 1973; Hutson, 1979; Lippett & Fox, 1971; Siantz, in press). It was commonly agreed that the fact that one is a college professor, administrator, or lives more than 200 miles from the inservice site does not automatically qualify them to conduct inservice activities.

Administrators should be involved with the training and fully support it. This practice was mentioned in six of the thirteen selections reviewed (Andrews, 1980; Brimm & Tollett, 1974; Hutson, 1979; Johnson, 1975; Lippett & Fox, 1971, Siantz, in press). According to the participants of the NEA workshop (Johnson, 1975), inservice should include all school

personnel at every level--"teachers, administrators, county officers, higher education personnel, and state department personnel" (p. 73).

In response to Brimm and Tollett's (1974) questionnaire, 68% of the respondents agreed with the statement that, "the implementation of innovation presented in inservice programs is often a function of the support received from school administrators" (p. 522).

Goals and objectives should be clear and specific.

This practice was mentioned in six of the thirteen selections reviewed (Havelock & Havelock, 1973; Hutson, 1979; King et al., 1977; Siantz, in press; Texas Education Agency, 1978; Wilen & Kindsvatter, 1978). Several authors endorse the concept that objectives and goals of inservice educational programs must be written and specified clearly (Havelock & Havelock, 1973). The results of the Brimm and Tollett (1974) survey indicated that this policy may not always be followed. Only 27% of the respondents agreed with the statement that the objectives on inservice programs in any system are always specific.

Inservice should be planned in response to assessed needs. This practice was mentioned in four of the thirteen selections reviewed (Allshouse & Ondell, 1979; Brimm & Tollett, 1974; Hutson, 1979; King et al., 1977; Siantz, in press; Texas Education Agency, 1978; Wilen & Kindsvatter, 1978; Zigarmi et al., 1977). Inservice education which does not focus upon resolving the teachers' or the administrators'

assessed needs will not have long range success in creating change (Allshouse & Ondell, 1979). Apparently; however, some programs do not bother to study the needs of teachers. In response to the statement, "most inservice programs arise from a study of the needs and problems of teachers," only 34% of the respondents to Brimm and Tollett's (1974) survey agreed. In fact, 45% of the respondents disagreed with the statement.

Inservice should be directed at changing teachers' behaviors, not students' behaviors. This practice was mentioned in five of the thirteen selections reviewed (Allshouse & Ondell, 1979; Hutson, 1979; Lawrence, 1974; Siantz, in press; Texas Education Agency, 1978). In Lawrence's (1974) research review, 36 studies used pupil outcomes as a criterion. Of these studies, 13 showed no significant differences in pupil behavior following inservice training of their teachers. Seven of those 13 studies, however, showed significant positive changes in teacher behaviors. Allshouse and Ondell (1979) endorse the belief that results of inservice should be used by the teacher participants in order to be considered effective.

Inservice should be voluntary rather than mandatory. This practice was mentioned in four of the thirteen selections reviewed (Johnson, 1975; King et al., 1977; Lippett & Fox, 1971; Zigarmi et al., 1977). All agreed with the 87 participants at the NEA workshop, that voluntary participation should be encouraged in inservice education rather than mandatory activities (Johnson, 1975).

Research Studies

In addition to the statements of best practice which were derived from informed opinion, this reviewer identified four empirical studies of interest in this investigation. The following criteria were established regarding which articles and reports to include in this section. Only literature written since 1957 was reviewed. No information regarding inservice education outside of the United States was included.

Research studies which were not published in a journal and thus not subject to critical review were eliminated. Articles which did not contain enough information to evaluate the research conducted were also omitted. Only studies which involved trial of inservice training or comparison of two or more were included. The most common reason for elimination of a study was that it did not give enough information about the procedures to critically review it.

Two studies included in this review are one-shot case studies. The other two articles are reports of comparisons of two formats and a control. Table 6 lists the four articles, type of design, treatment (independent variables), measures (dependent variables), results and criticisms.

Smith and Otto (1969) conducted a one-shot case study to determine if a personal reading course for teachers improved reading instruction in content areas. Subjects were 19 junior and senior high teachers. Five evening sessions of two hours were used to provide instruction to teachers on improving their own reading skills. Rate, interpretation,

Table 6

Research Studies

Article	Subjects	Treatment	Measures	Results	Criticisms
Smith & Otto 1969 One-shot case study	19 Junior & Senior High Teachers	Reading im- provement course	1)Pre-post Nelson Denny Reading Test 2)Pre-post Attitude In- ventory 3)Post course questionnaire	1)No major differences in attitudes 2)Reading skills 3)Question- naire teachers indicate wil- ling to teach skills taught in course	Unable to determine appropriateness of statistics used; No control or alternative treatment group; reliability & validity of measures not discussed
Schmid & Scranton, 1972 One-shot case study	17 special ed. and 6 regular class- room teachers	5-phase pro- gram in behavior modification	1)Pre-post survey on knowledge of of behavior modification	1)Significant differences between pre- post data	No control or alternate treat- ment group; re- liability & validity of measures not discussed; measure effec- tiveness of training in only one area.
Lee, 1970 Pretest-Post- test control group design	51 volunteer elementary teachers	1)Sensitivity training (Vs.) classroom training on principles of human re- lations	1)Pre-post Minn. Teacher Atti- tude 2)Pre-post Q-Sort 3)Post opin- ion 4) Absen- teeism	1)t-group bet- ter than con- trol on all but 2 measures 2)t-group bet- ter than classroom only on attendance	Reliability & validity of measures used were not dis- cussed

Table 6 - extended

Article	Subjects	Treatment	Measures	Results	Criticisms
Kasdon & Kelly, 1969 Post-test only control design	96 elementary teachers by a stratified random process 96 elementary pupils randomly selected from teachers class	1)Simulation activities to teach awareness of instructional levels of pupils in class 2)time of training	Teacher awareness of instructional reading level by testing student with Standard Reading Inventory & Compare with readability of reading text	1)There were significant differences between control & group I 2)Time of training made a difference 3)No difference between primary and intermediate	Measured effectiveness of training in only one area.

literal comprehension, and vocabulary were covered during each session.

Smith and Otto (1969) reported that there were no major differences in teacher attitudes or reading skills on the pre-post Nelson Denny Reading Test or the attitude inventory. However, analysis of results of a post-course questionnaire indicated that teachers were willing to teach to their students skills they were taught. The authors failed to give enough information in their report to determine if appropriate statistical procedures were used. Reliability and validity of the measures used in this study were not addressed. In addition, a limitation of this study as well as all the other studies reviewed (included and excluded articles) in both the best practice literature and the research studies was that they did not answer the question: do the conclusions apply equally to inservice programs involving urban, suburban, rural, secondary and elementary teachers? This criticism was raised by Cruikshank, Lorish and Thompson (1979).

Schmid and Scranton (1972) conducted a one-shot case study dealing with behavior modification techniques. Seventeen special education teachers and six regular classroom teachers completed a nine-week, five-phase training program which included obtaining pre-post measures, self-instruction, group sessions and practice with students. Analysis of the pre-post survey on knowledge of behavior modification indicated significant differences between pre-post data.

This study was limited in that there was no control or comparison group. Also, Schmid and Scranton (1972) did not discuss the reliability or validity of the measures they used.

Lee (1970) conducted a study designed to investigate and evaluate the effectiveness of sensitivity training in an inservice training program in human relations for classroom teachers. Subjects were 51 volunteer public elementary school teachers. All grade levels were represented in all three groups.

In this pretest-posttest control group design study, subjects were randomly assigned to one of three groups, sensitivity training, classroom training and control. The classroom group received 20 hours of instruction, demonstration, and discussion on the principles of human relations. The control group received no training during the study. The sensitivity group received training in two T-groups. These subjects received 20 hours of intensive interpersonal sensitivity training aimed at increased self-actualization and human relations skills.

Five dependent measures were obtained for the three groups. These measures were: pre-post data from records of teacher absenteeism and student absenteeism, during the semester in which the study took place; pre-post scores on the Minnesota Teacher Attitude Inventory (MTAI); pre-post scores on a Q-sort instrument designed to measure correlations between subjects' perception of their real and ideal

selves; and a 30-item opinion inventory upon which parents and administrators were asked to rate teachers' human relations skills.

Results of the study indicate that sensitivity training was more effective than the control as measured by the MTAI, Q-sort and student attendance. No significant difference was found between the T-group and the control using the 30-item opinion inventory or teacher absenteeism as measures. The sensitivity training was significantly better than the classroom group only on the student attendance measure. Thus, the authors concluded that the sensitivity training was effective.

The Lee (1970) study did have several important features. It compared two different techniques with a control rather than comparing one group with itself or one group with a group receiving no training. However, there are some limitations to this study that must be pointed out. Since a pre-posttest control group design was utilized, a threat to external validity was introduced; the possibility of there being an interaction between testing and treatment (Campbell & Stanley, 1963). Another limitation was the lack of discussion of reliability and validity of measures utilized. This study, also, involved only elementary teachers.

Kadson and Kelly (1969) conducted a study in an attempt to answer three questions:

- 1) were pupils of teachers who participated in a simulation-type

inservice program assigned reading materials more appropriate for their instructional reading levels than pupils of teachers who did not participate?

- 2) Does the time of the school year when an inservice program is scheduled make a difference in its effectiveness?
- 3) Are those who teach grades two and three more aware of pupils' instructional reading levels than those who teach grades four and five? (p. 79)

A three-group posttest-only control group type of research design was used in this study. Subjects were selected by a stratified random process and then assigned to the three groups by a stratified random process. The 96 classroom teachers were from a single middle-class suburban school system. A pupil sample was selected randomly from the classes of the teacher sample--one pupil from each class.

The three groups used in the study were a control group, which received no training during the study, and the two treatment groups. Both treatment groups received the same training utilizing simulation techniques to provide teachers with a knowledge of and the ability to administer an informal reading inventory in order to select more accurate reading materials appropriate for their pupils' instructional reading levels in their classrooms. One group, however, received training in the summer just prior to the beginning of the school year, the other group was trained in the fall after school had started.

The dependent variable was teacher awareness of the pupils' instructional reading level in the respective

classrooms of the three teacher samples. Awareness was determined by measuring the instructional reading levels of the pupil sample on the Standard Reading Inventory and the readability level of the instructional reading material.

Analysis of the results of this study revealed that there was a significant difference between the control group and the group receiving the training in the summer. Thus, the training was effective, if offered before school started, as measured by the dependent variable. There were no differences between primary and intermediate teachers.

Following Strauss' (1969) 20 guidelines for evaluating research reports, only two minor points were noted in this research; failure to state limitations and next steps for research. The only major limitations noted were particular to inservice training research and not the quality of the research design or report.

This study did not answer the question as noted previously being neglected by all the literature reviewed, that is, they did not limit their conclusions to specific populations. Another criticism is that the authors judged effectiveness in only one way (Havelock & Havelock, 1973; McAdams, Note 1).

Summary

In this review of the literature, research which supports Fuller's (1969) theory of stages of concerns of teachers was presented. Based on Fuller's theory, it appears that training strategies should be different for inservice teachers than preservice teachers.

Several studies were reviewed which support the position that teacher anxiety is an attribute of teachers that has potential to influence the effectiveness of teacher-pupil interactions and warrants investigation. In addition, literature supporting the teacher expectancy/self-fulfilling prophecy hypothesis and the effects teachers' attitudes have on the student-teacher relationship was presented. These studies point out that to increase the likelihood of success of mainstreaming, teachers' attitudes toward mainstreaming need to be investigated and attempts made to improve them.

Finally, best practice statements have been identified through a review of literature on inservice teacher education. In actual practice, however, it appears few reported best practices are used (Corono & Clark, 1978; Schmid & McAdams, 1981). Research on inservice training appears to consist largely of uncontrolled, one-shot case studies. There appears to be a lack of controlled, reliable research studies. The two controlled studies reviewed here did not attempt to determine the effectiveness of a complex, multi-faceted design. One study judged effectiveness of the training through knowledge gains. The other determined effectiveness through attitudinal changes. The area of determining if inservice training can impact on teacher attitudes, teacher anxiety level, and knowledge remains to be investigated.

CHAPTER 3

METHODS AND MATERIALS

This study was organized to investigate if an inservice training program of regular teachers, which incorporated practices based on 75% of identified inservice best practice statements, to teach informal diagnosis and prescriptive programmings has an effect on teacher anxiety, teachers' attitude and teachers' knowledge. In addition, the study was designed to investigate the relationships between teacher anxiety, teachers' attitudes toward mainstreamed handicapped students and knowledge about informal diagnosis and prescriptive programming.

Statement of Hypothesis

This study was designed to test the following hypotheses:

1. There is no significant difference in subjects' anxiety level, attitude toward mainstreaming handicapped students or knowledge regarding informal diagnosis and prescriptive programming as a result of participation in inservice training.
2. There is no relationship between teacher attitude toward mainstreaming handicapped students and teacher knowledge regarding informal diagnosis and prescriptive programming.

3. There is no relationship between teacher attitude toward mainstreaming handicapped students and teacher anxiety level.
4. There is no relationship between teacher anxiety level and teacher knowledge regarding informal diagnosis and prescriptive programming.

Variables

In this section, the independent and dependent variables are described. In addition, the control and intervening variables are listed.

Independent

The independent variable under investigation was the type of training the teachers received in informal diagnosis and prescriptive programming. This included a practicum experience of 3 weeks.

Dependent

There were three dependent variables in this study:

1. Knowledge of teachers about informal diagnosis and prescriptive programming as measured by the Informal Diagnosis and Prescriptive Programming (ID/PP) Test.
2. Attitude of teachers toward mainstreaming handicapped students as measured by the Attitudes Toward Mainstreaming Scale.
3. Anxiety level of teachers as measured by the Teaching Anxiety Scale.

Control

The following were considered controlled variables:

1. Public vs. private school teachers (only public school teachers were included in this study).
2. Regular vs. special education teachers (only regular education teachers were included in this study).

Intervening

The following were considered intervening variables:

1. Teacher personality.
2. Teacher competence prior to beginning of the study.
3. Philosophical agreement/disagreement with individualization.
4. Teacher motivation.
5. Academic degree held.
6. Age of teacher.
7. Years of teaching experience.
8. Sex of teacher.
9. Number of credit hours previously completed in special education courses.

Instrumentation

A questionnaire comprised of three instruments and a demographic data sheet was used in this study. The instruments measured knowledge about informal diagnosis and prescriptive programming, teacher anxiety and attitude toward mainstreaming.

Knowledge

Knowledge about informal diagnosis and prescriptive programming was measured by using a test developed as part

of the ID/PP training package (Midwest Regional Resource Center, 1975). The 43 point test has multiple choice, true-false, and short answer questions (see Appendix A). This test purports to measure the components of ID/PP as defined by the training package. The areas the test is reported to measure and related point distributions are task analysis-- 8; error pattern analysis -- 7; systematic modifications -- 5; behavioral objectives -- 5; matching material characteristics to learner characteristics -- 4; appropriate learning methods-- 5; and general information about informal diagnosis -- 9. Internal consistency reliability information was obtained from the tests completed by the subjects in this study. The coefficient alpha for the ID/PP knowledge test was .52 for the pretest and .64 for the posttest. Salvia and Ysseldyke (1978) suggest a reliability of .60 as a minimum for group data.

Attitude

Attitude towards mainstreaming handicapped students was measured by the Attitudes Toward Mainstreaming Scale (ATMS - see Appendix B). The eighteen-statement scale was developed to specifically meet the criteria of brevity, ease of administration, usefulness with persons other than special educators and satisfactory validity and reliability (Berryman, Neal & Robinson, 1980). The validation sample consisted of 159 subjects, 78% female and 22% male. The cross-validation sample included 164 subjects, 84% female and 16% male. Both samples included preservice and inservice teachers representing 17 teaching fields. Three factors,

Learning Capability, General Mainstreaming, and Traditional Learning Disabilities, became apparent from the analysis of each sample. Cronback alpha reliability coefficients for the total scale were .89 and .88 for the two samples; for the factors the coefficients ranged from .76 to .84. Pearson correlation coefficients between individual factors and total scale scores ranged from .81 to .86. Factor inter-correlations ranged from .42 to .55 (Berryman & Neal, 1980).

Anxiety

Anxiety of regular teachers was measured by the Teaching Anxiety Scale (TCHAS - see Appendix C). The TCHAS, " . . . was designed to provide a tool for measuring anxiety specific to the task of teaching" (Parsons, 1973, p. 1). The TCHAS contains 29 self-report statements about teacher reactions to teaching. The respondents indicate emotional responses to a variety of different situations related to teaching and attitudes toward teaching as a profession. A 1-5 choice option for each item ranges from low agreement (never) to high agreement (always). Approximately half of the items were negatively worded to off-set the effects of response acquiescence.

The alpha coefficients of internal consistency for the TCHAS range from .87 to .94. The test-retest reliability correlation for this 29-item instrument was established over intervals from one day to two months. The Pearson product moment correlations ranged from .83 to .95.

When comparing student teachers self-reports of teacher anxiety and observations of the anxiety level of these teachers by their teaching supervisor, Parsons (1973) discovered a significant correlation ($p \leq .05$). This evidence suggests that to at least some degree the teaching anxiety reported on the TCHAS corresponded to what teacher supervisors believed to be teaching anxiety in their student teachers.

Demographic Data

Demographic data about subjects in this study were obtained from a demographic data sheet. The sheet contained nine questions for subjects to answer, including information about the teacher's sex, age, academic degree, years of teaching experience, prior exposure to mainstreaming and number of credit hours obtained in special education courses (see Appendix D).

Subjects

The target population for this study was regular classroom teachers of grades K-12 in a rural environment. The sub-population from which the sample was drawn was regular classroom teachers of grades K-12 in one educational cooperative in a midwestern state. Teachers whose schools belonged to the cooperative were invited to volunteer for inservice to be conducted during the summer. Incentives offered to the teachers included payment of tuition, graduate credit, certification/recertification credit, paid travel, and lunch provided for the five days of training. The

volunteering teachers were divided according to grade level taught (i.e., elementary and secondary groups). Twenty-nine elementary teachers and twenty-eight secondary teachers participated in the study. Subjects for the control group were selected from a master list of teachers teaching in the educational cooperative. A random number table was used to determine which teachers were mailed the test. Teachers who had participated in the training during previous summers were eliminated. Nineteen teachers completed both the pre-test and posttest.

The group of elementary teachers was composed of 27 females and 2 males. The teacher's ages ranged from 21 to 59. These subjects had completed a mean of 2.0 credits in special education courses. The years of teaching experience ranged from zero to thirty-five with a mean of 10.83 years of experience (see Appendix E for frequency distribution). Twenty elementary teachers had their bachelor's degree and nine had their master's degree.

The group of secondary teachers was composed of 19 females and 9 males. The teacher's ages ranged from 21 to 59. These subjects had completed a mean of 1.11 credit hours in special education courses. The years of teaching experience ranged from one to twenty-two with a mean of 9.21 years of experience (see Appendix E for frequency distribution). Eighteen secondary teachers had their bachelor's degree, eight had their master's degree and two had their educational specialist's degree.

The control group was composed of 16 females and 3 males. The teacher's ages ranged from 21 to 65. The control group members had completed a mean of 6.84 credit hours in special education courses. The years of teaching experience ranged from 2 to 37 with a mean of 12.21 years of experience (see Appendix E for frequency distribution). Ten of the control group members had their bachelor's degree and nine had their master's degree. There were 9 elementary teachers and 10 secondary teachers in the control group.

Procedures

During the first week of June, 1981, subjects in the experimental groups received five days of training. The elementary teachers were trained by three qualified trainers. The trainers had participated in ID/PP training in the past. During the same week, secondary teachers received training from three different qualified trainers.

The training packages used were the Informal Diagnosis and Prescriptive Programming (ID/PP) workshop developed by the Midwest Regional Resource Center. The training packages were similar except that examples were on an elementary level for the elementary group and on a secondary level for the secondary group. The workshop was comprised of the following ten modules: (a) identifying the problem, (b) task analysis, (c) error pattern analysis, (d) systematic modifications, (e) setting priorities, (f) behavioral objectives, (g) learning methods/style, (h) task analysis of materials, (i) matching material characteristics with learner

characteristics, and (j) developing an individual educational plan.

After completing the five day workshop, the experimental groups participated in a practicum experience. The practicum was directed by staff employed by the educational cooperative. Subjects were assigned to grade levels appropriate to their regular teaching assignment. The subjects attended the practicum for three weeks. During the practicum the subjects worked on an individual basis with students identified as having learning problems. Subjects worked with their students each day for 45 to 90 minutes depending on the age of the child. The project staff observed subjects on an average of twice each week and offered feedback on the subject's performance. In addition, daily lesson plans (see Appendix F) and Individual Educational Programs (see Appendix G) were required for each student. Practicum sites were summer school classes in districts in the educational cooperative. Participants attended three-hour afternoon sessions twice a week during the practicum experience. These sessions were designed to familiarize participants with various handicapping conditions. The topics covered in the afternoon sessions were:

- (a) teaching strategies in relation to the mentally retarded child,
- (b) teaching strategies in relation to the learning disabled child (2 sessions),

- (c) teaching strategies in relation to the emotionally disturbed child,
- (d) teaching strategies in relation to the physically handicapped child and the child with chronic health problems, and
- (e) teaching strategies in relation to the hearing or visually impaired child.

Sixteen best practice statements supported in the literature were discussed in the literature review. Twelve of the 16 statements were incorporated in the design of the inservice training used in this study. This inservice training was school-based rather than college-based. Evaluation was built-in as a component of the training. The ID/PP training was activity-based. Demonstrations were followed by individual and small group activities during which participants practiced skills. Feedback was given to participants following each activity.

Rewards or incentives were an important part of this design. Incentives offered participants included payment of tuition, graduate credit, certification/recertification credit, payment for travel expenses, and lunch provided for the five days of training. In the past, participants have indicated that ID/PP training can be, and is, used in their classrooms effectively (McAdams, Note 1).

This training was offered during the summer so classroom teachers could participate. The trainers for this training had previously received training in how to deliver

inservice training and general information about inservice training.

Specific goals and objectives for ID/PP training have been developed and are listed in the manual for trainers (Midwest Regional Resource Center, 1975). The ID/PP training package was designed to answer needs as determined by needs assessments conducted in the mid-western United States by the MRRC. The need for this training for the teachers served by the educational cooperative was established by a needs assessment conducted by personnel from the cooperative.

ID/PP training was designed to change teachers' behavior in the classroom rather than students' behavior. Finally, this training was on a voluntary basis rather than being mandatory.

Four of the identified best practice statements were not incorporated into the training used in this study. These elements were not utilized due to the need to have control over the inservice training for the study. The four elements not included were individualization rather than group activities, participant input into planning goals and activities; administrator involvement; and involvement of the total school in a general effort rather than a "single-shot" program. These four factors could be incorporated in the design of training using ID/PP if it were not a controlled study situation. Thus, the training design utilized in this study incorporated 75% of the identified best practice principles for inservice training. The control group received no training.

Design

This study utilized a quasi-experiemntal, field-based approach. The design used is a non-equivalent control group design. According to Campbell and Stanley (1963), notation of the design is depicted as

$$\begin{array}{r} OX_1O \\ OX_2O \\ \hline O \quad O \end{array}$$

In this design " X_1 " is the elementary group that received 40 hours of ID/PP training and a three-week practicum. The secondary group that recieved 40 hours of ID/PP training and a three-week practicum is depicted by " X_2 ." The dependent variables are represented by "O." The control group received no training.

Campbell and Stanley (1963) discuss eight potential threats to internal validity. These are testing, history, maturation, instrumentation, regression, mortality, selection and selection interactions. In this study, testing, history, maturation and instrumentation were not considered problems since the experimental and control groups completed the same questionnaires with the same instructions at approximately the same time. Regression was not a threat since subjects were not selected based on any type of scores.

Mortality was higher in the control group than in the other two groups, thus causing a threat to internal validity. To counteract the possibility of mortality in the control group, members were offered an incentive to participate. The incentive was a chance in a drawing for \$50 worth of instructional or informational materials of the winner's

choice. However, of the 35 teachers who completed the pre-test, only 19 completed the posttest.

Selection and the selection interactions may be considered threats to this study. The elementary and secondary teachers who received the training were volunteers. Control group members were selected at random from a list of teachers in the educational cooperative. However, those that responded could be considered volunteers also, in that they chose whether to participate or not.

Sources of threats to external validity are also raised by Campbell and Stanley (1963). The threat of interaction of testing and treatment to the external validity of this study is viable since groups may have only been effected by the treatment because they completed the pretest. Interaction of selection and treatment poses a threat to the generalizability of these results. Effects of the treatment may well be specific to teachers who volunteer to participate in inservice training activities.

The threat to external validity represented by reactive arrangements may be present. Participants were informed that the test information was to help the school district evaluate its inservice training program.

Data Collection

There were four sections to the questionnaire: (a) the Teaching Anxiety Scale (TCHAS), (b) the Attitudes Toward Mainstreaming Scale (ATMS), (c) the ID/PP knowledge test, and (d) the demographic page. The questionnaire was assembled

so that three sections were alternated in their order. The fourth section, the demographic page, was always last. With the TCHAS as A, the ATMS as B, the ID/PP knowledge test as C, and the demographic data sheet as D, the following combinations of tests were distributed at random:

A B C A B C
 B C A C A B
 C A B B C A
 D D D D D D

This procedure was used to minimize the order effect on the different measures.

Data were collected twice during this study. Questionnaires were distributed to the experimental groups prior to the beginning of training on the first day of the five-day workshop. Subjects were given approximately 45 minutes to complete the questionnaire. Subjects were requested to put the last four digits of their Social Security number on each section of the questionnaire. To ensure that subjects remained anonymous, they were not required to put their names on their questionnaires.

Posttest measures were obtained from the experimental groups on the last day of the practicum. The same test procedures were used as described earlier except that the demographic data sheet was not included in the posttest measures.

On the first day of the workshop pretests were mailed to 120 randomly selected teachers with a cover letter (see Appendix H). Stamped and self-addressed return envelopes were enclosed. Procedures regarding order of the

four sections of the questionnaire and Social Security numbers were the same as used with the experimental group.

As an incentive for control group members to complete and return the questionnaire, subjects who participated were eligible for a drawing for \$50 worth of informational or instructional materials of their choice. Each questionnaire was numbered so records of respondents could be kept.

After 14 days, a follow-up letter was sent to non-respondents (see Appendix I). A copy of the questionnaire and a stamped, self-addressed return envelope were enclosed. A total of 37 pretests were completed and returned. One subject was dropped from the study because they had previously completed the workshop and practicum. Another subject was eliminated because they requested not to receive the posttest.

On the last day of the practicum, the posttests were mailed to the control group with a cover letter (see Appendix J) and a stamped, self-addressed return envelope. After 14 days a follow-up letter was sent to non-respondents (see Appendix K). A copy of the questionnaire and a stamped, self-addressed return envelope were enclosed. A total of 23 posttests were completed and returned. Three subjects were eliminated because they failed to complete all sections of the questionnaire. One subject was eliminated because they were an administrator rather than a regular education teacher. Thus, the number of control group members was 19.

Data Analysis

Individual scores for the ID/PP knowledge test were obtained by totaling the number of points on the test. The individual scores for the Attitudes Toward Mainstreaming Scale were arrived at by adding the ratings for each item on the total scale. The scores for the three factors of the Attitudes Toward Mainstreaming Scale were derived by adding the ratings for the items identified as a member of each factor. The items identified as part of the General Mainstreaming factor were 1, 4, 8, 9, 10, 15 and 17. Items 5, 6, 7, 11, 12, 14 and 16 comprised the Learning Capability factor. The Traditional Learning Disabilities factor contained items 2, 3, 13 and 18 (see Appendix B).

To obtain the individual scores for the Teaching Anxiety Scale, the items which required reverse scoring were identified. The 14 items were 1, 4, 6, 7, 9, 10, 13, 14, 17, 20, 22, 24, 25 and 28 (see Appendix C). The ratings for these 14 items were recoded (i.e., 1 became 5, 2 became 4, 3 remained 3, 4 became 2, and 5 became 1). The ratings were then added to obtain a total score.

The raw data from the three instruments which comprised the test were analysed by an analysis of variance with repeated measures (ANOVR) (Games, Gray, Herron & Pitz, 1974). The ANOVR was run six times, once for each dependent variable (scores on the ID/PP knowledge test, the Attitudes Toward Mainstreaming Scale (ATMS), and the Teaching Anxiety Scale (TCHAS)) and for the three factors of the ATMS. Alpha was set at .05.

Pearson correlation coefficients were computed for the data collected from the demographic page of the pretest and the scores on the ID/PP knowledge test, the Attitudes Toward Mainstreaming Scale and the Teaching Anxiety Scale. Scores from the pretest and posttest for the ID/PP knowledge test, the Attitudes Toward Mainstreaming Scale and the Teaching Anxiety Scale were used.

Data from the posttest Attitudes Toward Mainstreaming Scale, Teaching Anxiety Scale and ID/PP knowledge test were analyzed using multiple regression analysis. First, the scores from the Attitudes Toward Mainstreaming Scale and the Teaching Anxiety Scale plus the years of teaching experience were used to predict the ID/PP knowledge test scores. Scores from the Teaching Anxiety Scale and the ID/PP knowledge test plus the years of teaching experience were then used to predict the Attitudes Toward Mainstreaming Scale scores. Next, scores from the Attitudes Toward Mainstreaming Scale and the ID/PP knowledge test plus the years of teaching experience were used to predict the Teaching Anxiety Scale scores. These three analyses were then rerun with number of credit hours completed in special education courses replacing years of teaching experience. Alpha was set at .05 for all analyses.

CHAPTER 4

RESULTS

To address the question of the extent to which anxiety level of teachers, teachers' attitudes toward mainstreaming and teachers' knowledge regarding ID/PP were influenced by participation in inservice training, data were subjected to a two factor mixed analysis of variance with repeated measures. The extent of the relationship between teacher anxiety, teachers' attitudes toward mainstreaming and knowledge regarding ID/PP was evaluated through an analysis of product moment correlations between variables and the prediction of scores on the dependent variables through multiple regression procedures. Each procedure is discussed separately.

Analysis of Variance

The results from the Attitudes Toward Mainstreaming Scale (ATMS), the Teaching Anxiety Scale (TCHAS), and the informal diagnosis and prescriptive programming (ID/PP) knowledge test were analyzed by a mixed analysis of variance with repeated measures. Each dependent variable was analyzed separately across the three groups and two occasions (e.g., pretest and posttest). In addition, the three factors from the ATMS, General Mainstreaming, Learning Capabilities and Traditional Learning Disabilities, were analyzed separately. Tables 7 to 12 contain the means, standard deviations, and analysis of variance summary table for each of the six scores.

Table 7

Means, Standard Deviations and Analysis
of Variance Summary Table for
ID/PP Knowledge Test

	Pretest	Posttest
Elementary	$\bar{X} = 13.93$ $S = 4.33$	$\bar{X} = 26.97$ $S = 4.92$
Secondary	$\bar{X} = 12.14$ $S = 3.69$	$\bar{X} = 22.21$ $S = 6.91$
Control	$\bar{X} = 15.63$ $S = 5.84$	$\bar{X} = 14.79$ $S = 5.42$

Source	MS	df	F	PROB.
<u>Between Subjects</u>				
Group	340.23	2	7.65	.00
Error	44.45	73		
<u>Within Subjects</u>				
Pretest/Posttest	2728.53	1	261.51	.00
Group X Pretest/Posttest	580.90	2	55.67	.00
Error	10.43	73		

Table 8

Means, Standard Deviations and Analysis
of Variance Summary Table for
Attitudes Toward Mainstreaming Scale

	Pretest	Posttest
Elementary	$\bar{X} = 51.03$ $S = 10.63$	$\bar{X} = 47.24$ $S = 13.17$
Secondary	$\bar{X} = 51.04$ $S = 9.35$	$\bar{X} = 50.07$ $S = 11.60$
Control	$\bar{X} = 54.37$ $S = 12.09$	$\bar{X} = 52.84$ $S = 12.05$

Source	MS	df	F	PROB.
<u>Between Subjects</u>				
Group	231.29	2	1.13	.33
Error	204.67	73		
<u>Within Subjects</u>				
Pretest/Posttest	181.29	1	3.06	.08
Group X Pretest/Posttest	31.24	2	.53	.59
Error	59.17	73		

Note: Maximum possible score is 90.

Table 9

Means, Standard Deviations and Analysis
of Variance Summary Table for
General Mainstreaming Factor of
Attitudes Toward Mainstreaming Scale

	Pretest	Posttest
Elementary	$\bar{X} = 24.00$	$\bar{X} = 22.41$
	$S = 6.04$	$S = 6.72$
Secondary	$\bar{X} = 25.21$	$\bar{X} = 24.50$
	$S = 6.05$	$S = 5.80$
Control	$\bar{X} = 25.53$	$\bar{X} = 25.53$
	$S = 6.50$	$S = 6.44$

Source	MS	df	F	PROB.
<u>Between Subjects</u>				
Group	71.23	2	1.11	.34
Error	64.19	73		
<u>Within Subjects</u>				
Pretest/Posttest	28.66	1	2.09	.15
Group X Pretest/Posttest	7.48	2	.55	.58
Error	13.73	73		

Note: Maximum possible score is 35.

Table 10

Means, Standard Deviations and Analysis
of Variance Summary Table for
Traditional Learning Disabilities Factor of
Attitudes Toward Mainstreaming Scale

	Pretest	Posttest
Elementary	$\bar{X} = 12.48$	$\bar{X} = 12.48$
	$S = 3.03$	$S = 3.03$
Secondary	$\bar{X} = 11.79$	$\bar{X} = 11.79$
	$S = 2.63$	$S = 2.63$
Control	$\bar{X} = 13.21$	$\bar{X} = 13.21$
	$S = 4.14$	$S = 4.14$

Source	MS	df	F	PROB.
<u>Between Subjects</u>				
Group	23.24	2	1.13	.33
Error	20.63	73		
<u>Within Subjects</u>				
Pretest/Posttest	0.00	1	0.00	1.00
Group X Pretest/Posttest	0.00	2	0.00	1.00
Error	0.00	73		

Note: Maximum possible score is 20.

Table 11

Means, Standard Deviations and Analysis
of Variance Summary Table for
Learning Capability Factor of
Attitudes Toward Mainstreaming Scale

	Pretest	Posttest
Elementary	$\bar{X} = 13.59$	$\bar{X} = 12.38$
	$S = 3.56$	$S = 3.79$
Secondary	$\bar{X} = 13.82$	$\bar{X} = 13.14$
	$S = 3.61$	$S = 4.03$
Control	$\bar{X} = 15.26$	$\bar{X} = 14.37$
	$S = 4.33$	$S = 3.95$

Source	MS	df	F	PROB.
<u>Between Subjects</u>				
Group	39.47	2	1.81	.17
Error	21.87	73		
<u>Within Subjects</u>				
Pretest/Posttest	33.16	1	4.25	.04
Group X Pretest/Posttest	1.00	2	0.13	.88
Error	7.80	73		

Note: Maximum possible score is 35.

Table 12

Means, Standard Deviations and Analysis
of Variance Summary Table for
Teaching Anxiety Scale

	Pretest	Posttest
Elementary	$\bar{X} = 54.59$	$\bar{X} = 52.86$
	$S = 11.79$	$S = 11.72$
Secondary	$\bar{X} = 61.89$	$\bar{X} = 59.89$
	$S = 14.74$	$S = 12.65$
Control	$\bar{X} = 55.11$	$\bar{X} = 53.16$
	$S = 13.20$	$S = 15.22$

Source	MS	df	F	PROB.
<u>Between Subjects</u>				
Group	870.28	2	2.83	.07
Error	307.94	73		
<u>Within Subjects</u>				
Pretest/Posttest	134.53	1	3.57	.06
Group X Pretest/Posttest	0.30	2	0.01	.99
Error	37.68	73		

Note: Range of possible scores is 29 to 145.

The tests of interest here were whether there were any interactions between group membership and pre-posttest scores. There was a significant interaction between pre-posttest scores and group for the ID/PP knowledge test. Figure 1 graphically displays this interaction. There were no significant interactions for the Teaching Anxiety Scale, the total Attitudes Toward Mainstreaming Scale or any of the three factors of the ATMS.

Since the group $\times$ pre-posttest interaction was significant for the ID/PP knowledge test, simple effects were studied using Scheffe's follow-up procedure with individual variances and covariances as error estimates. Individual variances and covariances were used in the follow-up analysis since tests of the homogeneity of the variance-covariance matrix and the assumption of homogeneous variances and correlations between repeated measures were significant. The results of the Scheffe procedure are presented in Table 13.

An analysis of the results of this follow-up procedure indicated that there were significant differences in the pretest and posttest scores of the three groups. The control group scored significantly higher ($\bar{X} = 15.63$) on the pretest than the secondary ($\bar{X} = 12.14$) or elementary groups ($\bar{X} = 12.43$). The elementary and secondary groups were not significantly different on the pretest.

On the posttest, however, the control group scored significantly lower ($\bar{X} = 14.79$) than the secondary ($\bar{X} = 22.21$) or elementary groups ($\bar{X} = 14.79$). The elementary group scored significantly higher than the secondary group.

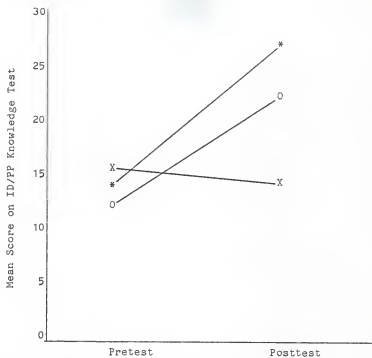


Figure 1. Interaction of Group and Pretest/Posttest

Legend: *Elementary
OSecondary
XControl

Table 13

Comparison of Simple Means Using
Scheffe's Procedure

Comparison	F Statistic	Lower Limit of Confidence Interval	Upper Limit of Confidence Interval
<u>PRETEST</u>			
Elem.-Control	1.08*	.62	2.78
Sec.-Control	2.31*	1.18	5.80
Elem.-Sec.	4.81	-3.02	6.60
<u>POSTTEST</u>			
Elem.-Control	7.81*	4.27	20.09
Sec.-Control	4.10*	3.32	11.52
Elem.-Sec.	2.98*	1.78	7.74
<u>PRETEST-POSTTEST</u>			
Elementary	2.77*	10.27	15.81
Secondary	.11*	.73	.95
Control	1.91*	8.16	11.98

*significant at .05 level.

In comparing the pretest and posttest scores for each group, it was found that the elementary and secondary groups scored significantly higher on the posttest than on the pretest. The control group scores on the posttest ($\bar{X} = 14.79$) were significantly lower than on the pretest ($\bar{X} = 15.63$).

A review of the results from the analysis of variance indicates that anxiety level of teachers and teachers' attitudes toward mainstreaming handicapped students as measured by the dependent variables were not significantly influenced by participation in inservice training. However, teachers' knowledge regarding informal diagnosis and prescriptive programming was significantly influenced by participation in inservice training. Teachers who participated in the training program significantly increased their knowledge about informal diagnosis and prescriptive programming.

Correlation Coefficients

Pearson product moment correlation coefficients were computed between demographic data and the pretest and posttest scores on the three dependent variables. The results of this analysis for all three groups are presented in Table 14. The same analysis was repeated for each group separately. The results of these analyses are presented in Tables 15 to 17.

When interpreting the magnitude of correlation coefficients, Borg and Gall (1979) suggest .65 as the criterion for a close relationship. They suggest that a very close relationship between two variables is indicated by a

Table 14

Pearson Correlation Coefficients for Demographic Data and
Dependent Variables for All Subjects

Group	Degree	Exper- ience	Hours	Pre ID/PP	Post ID/PP	Pre ATMS	Post ATMS	Pre TCHAS	Post TCHAS
Degree	.12								
Exper- ience	.05	.38							
Hours	.25	.16	.02						
Pre ID/PP	.11	.06	-.15	.27					
Post ID/PP	-.63	-.11	-.11	-.07	.38				
Pre ATMS	.12	-.11	.07	-.23	-.02	-.11			
Post ATMS	.18	-.10	-.07	-.10	-.05	-.15	.56		
Pre TCHAS	.05	-.07	-.23	-.24	-.03	.09	.14	.06	
Post TCHAS	.04	-.16	-.25	-.26	-.05	.05	.16	.21	.79

Table 15

Pearson Correlation Coefficients for Demographic Data and
Dependent Variables for Elementary Group

	Degree	Exper- ience	Hours	Pre ID/PP	Post ID/PP	Pre ATMS	Post ATMS	Pre TCHAS	Post TCHAS
Degree									
Exper- ience	.37								
Hours	.04	-.23							
Pre ID/PP	.01	-.16	.15						
Post ID/PP	-.03	-.13	.14	.55					
Pre ATMS	-.16	.06	-.00	.13	.23				
Post ATMS	-.23	-.17	.06	.15	.31	.25			
Pre TCHAS	-.19	-.43	.08	.12	.10	.19	-.02		
Post TCHAS	-.33	-.38	-.13	.17	.16	.23	.29	.61	

Table 16

Pearson Correlation Coefficients for Demographic Data and
Dependent Variables for Secondary Group

	Degree	Exper- ience	Hours	Pre ID/PP	Post ID/PP	Pre ATMS	Post ATMS	Pre TCHAS	Post TCHAS
Degree									
Exper- ience	.47								
Hours	.19	.00							
Pre ID/PP	.13	-.29	.46						
Post ID/PP	-.18	-.02	.17	.59					
Pre ATMS	-.19	-.10	.06	-.12	-.25				
Post ATMS	-.18	-.18	-.04	-.12	-.29	.67			
Pre TCHAS	.04	.03	-.23	.02	.22	.20	.14		
Post TCHAS	-.09	.03	-.32	-.20	.03	.31	.32	.83	

Table 17

Pearson Correlation Coefficients for Demographic Data and
Dependent Variables for Control Group

	Degree	Exper- ience	Hours	Pre ID/PP	Post ID/PP	Pre ATMS	Post ATMS	Pre TCHAS	Post TCHAS
Degree									
Exper- ience	.38								
Hours	.25	.03							
Pre ID/PP	.04	-.21	.21						
Post ID/PP	.24	-.14	.24	.89					
Pre ATMS	.02	.19	-.57	-.20	-.06				
Post ATMS	.14	.18	-.37	-.30	-.15	.91			
Pre TCHAS	-.22	-.21	-.41	-.02	.00	.08	.04		
Post TCHAS	-.17	-.30	-.35	.04	.04	.02	.02	.91	

correlation of over .85. For purposes of this study, .65 was viewed as significant and practical.

None of the correlations between the dependent variables and each other were significant for the total group or any individual group. In reviewing the results shown in Table 14, there is one correlation of practical importance for all three groups. That is the correlation between the pretest and posttest scores on the Teaching Anxiety Scale.

There were no significant relationships indicated in Table 15 for the elementary group alone. In reviewing the results in Table 16 for the secondary group alone, there are two correlations which could be considered of practical importance. These two correlations are between the pretest and posttest scores on the Teaching Anxiety Scale and the pretest and posttest scores on the Attitudes Toward Mainstreaming Scale.

In reviewing the results shown in Table 17, there are three correlations which indicate a significant relationship for the control group. These correlations are between the pretest and posttest scores on the three dependent variables.

In summary, there were significant relationships found between pretest and posttest scores for (a) the total group on the Teaching Anxiety Scale, (b) the secondary and control groups on the Attitudes Toward Mainstreaming Scale, and (c) the control group on the ID/PP knowledge test. Teacher anxiety and teachers' attitude toward mainstreaming handicapped students were not significantly related. Likewise, teacher

anxiety and teachers' knowledge regarding informal diagnosis and prescriptive programming were not significantly related. The relationship between teachers' attitude toward mainstreaming handicapped students and teachers' knowledge regarding informal diagnosis and prescriptive programming was not significant.

Regression Analysis

A multiple regression procedure was used to predict the scores on the posttest for each dependent variable. The years of teaching experience and number of credit hours completed in special education courses were included as independent variables. Analyses of nine models were conducted.

The first model was tested to determine if scores on the Attitudes Toward Mainstreaming Scale and the Teaching Anxiety Scale were useful in predicting scores on the ID/PP knowledge test. The second model was tested to determine if scores on the Teaching Anxiety Scale and the ID/PP knowledge test were useful in predicting scores on the Attitudes Toward Mainstreaming Scale. The third model was tested to determine if scores on the Attitudes Toward Mainstreaming Scale and the ID/PP knowledge test were useful in predicting scores on the Teaching Anxiety Scale. The fourth, fifth, and sixth models were the same as the three above except that years of teaching experience was added as an independent variable. The seventh, eighth, and ninth models were the same as the three above except number of credit hours in special education courses was substituted for years of teaching experience. Tables 18 to 20 contain prediction equations and a summary of the analysis for the nine models tested.

Table 13

Prediction Equations and Summary of Regression Analysis for
ID/PP Knowledge Test, ATMS, and TCHAS

Prediction Equation	df	F	P	r ²
$y = 24.54 - .10x + .05x$ ID/PP ATMS TCHAS Knowledge Test	2	1.06	.35	.03
$y = 43.79 - .26x + .21x$ ATMS ID/PP TCHAS Knowledge Test	2	2.84	.06	.07
$y = 40.12 + .25x + .14x$ TCHAS ATMS ID/PP Knowledge Test	2	2.08	.13	.05

Table 19

Prediction Equations and Summary of Regression Analysis for
ID/PP Knowledge Test, ATMS, TCHAS and Years of Teaching Experience

Prediction Equation	df	F	P	r ²
$y = 26.64 - .10x_{\text{ATMS}} + .03x_{\text{TCHAS}} - .11x_{\text{Experience}}$ ID/PP Knowledge Test	3	1.00	.39	.04
$y = 44.91 - .27x_{\text{ID/PP Knowledge Test}} + .20x_{\text{TCHAS}} - .05x_{\text{Experience}}$ ATMS	3	1.90	.14	.07
$y = 46.64 + .22x_{\text{ATMS}} + .09x_{\text{ID/PP Knowledge Test}} - .40x_{\text{Experience}}$ TCHAS	3	2.88	.04	.11

Table 20

Prediction Equations and Summary of Regression Analysis for
ID/PP Knowledge Test, ATMS, TCHAS, and Credit Hours in Special Education Courses

	Prediction Equation	df	F	P	r ²
ID/PP Knowledge Test	$y = 25.40 - .10x + .04x - .08x$ ATMS TCHAS Hours	3	0.81	.50	.03
ATMS Knowledge Test	$y = 45.03 - .27x + .20x - .11x$ ID/PP TCHAS Hours	3	1.96	.13	.08
TCHAS Knowledge Test	$y = 43.72 + .22x + .11x - .46x$ ATMS ID/PP Hours	3	1.93	.04	.11

Results of the first analysis indicated that scores on the Attitudes Toward Mainstreaming Scale and the Teaching Anxiety Scale were not useful in predicting scores on the ID/PP knowledge test. The results of the second analysis indicated that scores on the Teaching Anxiety Scale and ID/PP knowledge test were not useful in predicting scores on the Attitudes Toward Mainstreaming Scale. The results of the third analysis indicated that scores on the Attitudes Toward Mainstreaming Scale and the ID/PP knowledge test were not useful in predicting scores on the Teaching Anxiety Scale.

Results of the fourth and fifth analyses indicated that placing years of teaching experience in the models did not result in useful predictions. However, results of the sixth analysis indicated that scores on the Attitudes Toward Mainstreaming Scale and the ID/PP knowledge test plus years of teaching experience were useful in predicting scores on the Teaching Anxiety Scale. The Bonferonni procedure was used as a follow-up of the overall pretest. Results from this procedure indicated that number of years of teaching experience was useful in predicting scores on the Teaching Anxiety Scale when the other variables were held constant. The other variables were not useful in predicting the Attitudes Toward Mainstreaming Scale scores.

Results of the seventh and eighth analyses indicated that placing number of credit hours completed in special education courses in the models did not result in useful predictions. The results of the ninth analysis, however, indicated

that scores on the Attitudes Toward Mainstreaming Scale and the ID/PP knowledge test plus number of credit hours completed in special education courses were useful in predicting scores on the Teaching Anxiety Scale. The Bonferonni procedure was used as a follow-up to the overall F test. Results from this procedure indicated that number of credit hours completed in special education courses was useful in predicting scores on the Teaching Anxiety Scale when the other variables are held constant. The other variables were not useful in predicting the Teaching Anxiety Scale scores.

Next, a comparison of the model with the scores on the ID/PP knowledge test and the Attitudes Toward Mainstreaming Scale used to predict Teaching Anxiety Scale scores was made with the model using scores on the ID/PP knowledge test, the Attitudes Toward Mainstreaming Scale and number of years of teaching experience to predict scores on the Teaching Anxiety Scale. An estimate of the squared multiple correlation between years of teaching experience and teacher anxiety of .06 was generated. This indicates that of the variance in Teaching Anxiety Scale scores unaccounted for by the scores on the ID/PP knowledge test and the Attitudes Toward Mainstreaming Scale, 6% was associated with years of teaching experience. Although number of years of teaching experience was a statistically significant predictor of scores on the Teaching Anxiety Scale, it does not appear practically significant.

Likewise, a comparison was made of the model with the scores on the ID/PP knowledge test and the Attitudes Toward

Mainstreaming Scale used to predict Teaching Anxiety Scale scores with the model using scores on the ID/PP knowledge test, the Attitudes Toward Mainstreaming Scale and the number of credit hours completed in special education courses to predict scores on the Teaching Anxiety Scale. An estimate of the squared multiple correlation between number of credit hours completed in special education courses and teacher anxiety of .06 was generated. This indicated that of the variance in Teaching Anxiety Scale scores unaccounted for by the scores on the ID/PP knowledge test and the Attitudes Toward Mainstreaming Scale, 6% was associated with number of credit hours completed in special education courses. Although number of credit hours in special education courses was statistically a good predictor of scores on the Teaching Anxiety Scale, it does not appear to be of practical significance.

A review of the results of the multiple regression analysis procedure reveals that years of teaching experience and number of credit hours taken in special education courses were good predictors of teaching anxiety. However, teachers' attitudes toward mainstreaming, teaching anxiety level and knowledge regarding ID/PP were not related.

Summary

The results from the analysis of variance indicated that participation in inservice training appears to improve teachers' knowledge regarding informal diagnosis and prescriptive programming. Participation in inservice training did not appear to influence teacher anxiety levels or teachers' attitudes toward mainstreaming handicapped students.

Results of the Pearson Product moment correlations show that there were no significant correlations between teacher anxiety, teachers' attitudes toward mainstreaming and knowledge regarding informal diagnosis and prescriptive programming. The results of the multiple regression procedure indicate that the scores on any dependent variable are not predicted by the scores on the other dependent variables. Number of credit hours completed in special education courses and number of years of teaching experience were good predictors of teacher anxiety.

CHAPTER 5

DISCUSSION AND CONCLUSIONS

In this study the effects of a regular education inservice training program on teacher anxiety, teacher attitudes and knowledge were investigated. The training program incorporated 75% of best practice statements generated from a review of the literature on inservice training. In addition to the effects of the training, the relationships between teacher anxiety, teacher attitudes and knowledge were investigated. In this chapter, the findings of this study are discussed. There are six sections: (a) significance of study, (b) discussion, (c) conclusions, (d) implications, (e) suggestions for future research, and (f) summary.

Significance of Study

Historically, "inservice education has been the neglected step-child of teacher training" (Edelfelt, 1974, p. 250). It has been relegated to Saturdays, time after school, evenings, "single-shot," and "quick-and-dirty" workshops.

Most contemporary education conferences have at least one session directed toward the topic of inservice education (Heller, 1978). Concern for inservice has increased to the point that the Department of Education funded a National Council of States on Inservice Education. Inservice for general educators, in particular, has become a

priority for the Office of Special Education and Rehabilitation's Division of Personnel Preparation (Harvey, 1976; Saettler, 1976).

Some investigators (Edelfelt, 1974; Hass, 1957) strongly suggest that inservice education has been inadequate and has failed to improve professional performance. If the purpose of inservice is to improve teachers' ability to teach, it makes sense to investigate some of the factors which influence teachers' ability to work effectively with their students.

Teacher attitude is one of the factors which influences the teacher-student relationship (Curran, 1977; Good & Brophy, 1972; Gottlieb, Semmel & Veldman, 1978; Reynolds & Greco, 1980; Silberman, 1969). Teachers' attitudes toward mainstreaming handicapped students may determine how well mainstreaming will work (Martin, 1974; McMillian, Jones & Meyers, 1976; Moore & Fine, 1978; Williams & Algozzine, 1977). Cruikshank and Paul (1971) stressed the importance of teacher attitudes when they stated, "teacher expectancy is a real phenomenon and possibly never more evident than in the teacher-handicapped child relationship" (p. 370).

Stress and anxiety appear to be pervasive in our modern society. According to Dr. S. Blanton (cited in Peale, 1952), an eminent psychiatrist, "anxiety is the great modern plague" (p. 122). Teachers, as are other professionals, are subject to anxiety and stress (Coates & Thoresen, 1976; Keavney & Sinclair, 1978; Parsons, 1973; Styles & Cavanagh, 1977).

Research on teacher anxiety and stress demonstrates that it may have a negative influence on both the social and emotional adjustments of students (Coates & Thoresen, 1976; Doyal & Forsyth, 1973; Koon, 1971; Moskowitz & Hayman, 1974; Washburne & Heil, 1960). Implementation of P. L. 94-142 has placed additional stress on regular classroom teachers (Bensky, Shaw, Gouse, Bates, Dixon & Beane, 1980). Teacher anxiety causes stress which leads to teacher burn-out (Miller, 1979; Sparks & Hammond, 1981). Although no national figures are available on the number of teachers affected by burn-out, it is recognized as a major problem in education today (Bensky et al., 1980; Sparks & Hammond, 1981; Weiskopf, 1980). Burn-out costs the educational system money and quality personnel.

Regular education teachers perceive a need for inservice training. Results of needs assessment studies indicate that regular classroom teachers lack confidence in their ability to teach handicapped students (Baker & Gottlieb, 1980; Gickling & Theobald, 1975; Shotel, Iano & McGettigan, 1972).

It might appear that our present-day economy has placed educators in a situation where they must come to grips with the reality that fiscal resources are limited in education. Furthermore, proposed cuts in the Federal budget have the potential to impact inservice education. If less money is provided for personnel preparation in special education, as is now proposed, more regular teachers will be placed in the role of educating the handicapped. Programmatic budget

cuts may lead to placement of even more handicapped children into the mainstream of education (Morsink, Note 2). With less money available to provide inservice education plus the additional needs for it due to budget cuts, the need for professionals to look for effective training strategies will become even more apparent. In addition, inservice training which deals with more than one problem will be needed.

"Innovations designed specifically for inservice training on the basis of research on teaching and learning have rarely been considered or implemented" (Corono & Clark, 1978, p. 168). An investigation which dealt with the effectiveness of inservice training to teach skills needed to teach handicapped children in the regular classroom seemed timely. Additionally, the significance of this study increased when the effects of training on two variables known to influence teacher effectiveness, teacher attitude and teacher anxiety were investigated.

Discussion

There were four major hypotheses tested in this study. The first hypothesis addressed differences in subjects' anxiety level, attitudes toward mainstreaming handicapped students or knowledge regarding informal diagnosis and prescriptive programming as a result of participation in inservice training.

The null hypothesis was accepted for teacher anxiety level and attitudes toward mainstreaming handicapped students but not for knowledge regarding informal diagnosis and

prescriptive programming. Knowledge regarding informal diagnosis and prescriptive programming improved for teachers who participated in the training programming but not for the control group. This finding was in agreement with the studies by Haring (1956) which found that inservice training about exceptional students did improve teachers' knowledge. In addition, although there were no significant differences between the elementary and secondary groups on the knowledge test at the beginning of the training, the elementary group was significantly higher on the posttest. This suggests that training affected the secondary group differently than the elementary group.

Data from this study suggest that teacher anxiety levels were not significantly reduced as a result of participation in inservice training. This data supports the findings of Treese (1971) who found that inservice teachers anxiety levels were not affected by training through microteaching. It should be noted; however, that Treese investigated general level of teachers and not teaching anxiety specifically.

There are some plausible explanations of why the teaching anxiety levels of teachers were not reduced. Fuller's (1969, 1974) theory of stages of concerns of teachers supports one explanation for this finding. The training conducted in this study focused on the "how to" of the teaching process in order to increase teacher effectiveness in working with students with learning problems. Thus, task and impact concerns of teachers were addressed. As mentioned previously,

Bensky et al. found that implementation of P. L. 94-142 has placed additional stress on classroom teachers. Fuller, Parsons & Watkins (1974) proposed that under stress conditions, teachers' concerns may revert back to self or survival concerns. Perhaps this inservice training was not effective in reducing teacher anxiety because it addressed a higher level of concerns than the teachers actually possessed.

An alternate explanation is that the Teaching Anxiety Scale (TCHAS) was not sensitive to changes that did occur in teachers' anxiety levels. Although the TCHAS has been shown to assess teaching anxiety specifically and not general levels of anxiety, it was not designed to specifically measure anxiety toward teaching handicapped students. Perhaps teachers' general teaching anxiety level was not reduced but they may feel less anxious about working with the handicapped. Another explanation is offered by Coates and Thoresen (1976). They suggest that one reason anxiety studies in the past haven't shown changes in teacher anxiety is that they use paper and pencil tests rather than behavioral data.

The results of this study indicate that teachers' attitudes toward mainstreaming handicapped students were not influenced by participation in the inservice training. Two logical deductions can be made from this finding. One is that the attitudes of the teachers were not changed. The second is that the instrument used, the Attitudes Toward Mainstreaming Scale (ATMS), did not measure changes that did occur.

Research by Treese (1971) supports the explanation that teacher attitudes were not changed by the inservice training. He found that a microteaching experience did not affect the teaching attitudes of inservice teachers.

One cause for there being no attitudinal changes may be that the practicum experience focused on working with students individually. In a mainstreaming situation, classroom teachers spend most of the time working in a group setting rather than individually. Teachers may have seen that when working with an individual student they could apply the knowledge and skills learned in the training, but it may not appear practical in a classroom situation. Therefore, their attitudes toward mainstreaming did not improve.

Information from two informal sources would suggest that attitudinal changes did occur and that the ATMS was not sensitive to them. Self-reports of subjects to the training staff indicated that they had changed their attitudes as a result of the training experience.

In addition, the university which offered graduate credit for participation in the training had the subjects complete a course evaluation form. Subjects were asked to rate the course on a five point Likert scale for several variables. One was considered low and five was considered high on the scale. When asked to rate whether the course had improved attitudes, 92% rated that their attitude improvement was high (i.e., 4 or 5 on the scale). The mean rating for that item was 4.6.

One of the major components of this training was the practicum experience where teachers actually applied the knowledge and skills learned in the workshop setting in working individually with students with learning problems. Allport's (1954) theory of attitude formation would suggest that the teachers' attitudes would improve after having contact with handicapped students. Research by Effron and Effron (1967), Shotel et al. (1972), Haring (1956), and Wechsler, Suarez & McFadden (1975) confirm the hypothesis that attitudes toward the handicapped improved after contact with them. This lends support the for explanation that there were changes in attitudes not depicted in the scores on the ATMS.

The second hypothesis tested in this study was that there is no relationship between teacher attitudes toward mainstreaming handicapped students and teacher knowledge regarding informal diagnosis and prescriptive programming; this hypothesis was accepted. An additional finding was that previous credit hours completed in special education courses and years of teaching experience were not good predictors of teacher attitudes toward mainstreaming handicapped students. Curran (1977) also found that years of teaching experience and number of special education courses completed were not good predictors of teacher attitudes. Results of this study and Curran's (1977) study both substantiate the conclusion Haring (1957) made that knowledge alone was not sufficient to change teacher attitudes.

Hypothesis three for this study addressed the relationship between teacher attitudes toward mainstreaming handicapped students and teacher anxiety level. No relationship was indicated between these variables. The author believed that teachers who had negative attitudes toward mainstreaming would also be more anxious. This belief was not confirmed. One explanation may be that the Teaching Anxiety Scale does not measure anxiety toward teaching the handicapped specifically.

The fourth hypothesis tested in this study was there is no relationship between teacher anxiety level and teacher knowledge regarding informal diagnosis and prescriptive programming. This hypothesis was accepted based on the results of both the multiple regression procedures and correlations. Knowledge regarding informal diagnosis and prescriptive programming was not a good predictor of teacher anxiety. An additional finding of this study was that years of teaching experience was a good predictor of teacher anxiety. This finding was supported by Parson's (1973) study where she found that teaching anxiety decreases as teaching experience increases. Number of credit hours completed in special education courses was also a good predictor of teacher anxiety.

Conclusions

Based on the results of this study, the following conclusions can be drawn:

1. Inservice training in informal diagnosis and prescriptive programming does improve teachers'

- knowledge about informal diagnosis and prescriptive programming.
2. Inservice training in informal diagnosis and prescriptive programming does not affect teacher anxiety levels as measured by the Teaching Anxiety Scale.
 3. The effects of inservice training in informal diagnosis and prescriptive programming on teachers' attitudes toward mainstreaming handicapped students are questionable.
 4. Teacher attitudes toward mainstreaming handicapped students are not significantly related to teacher anxiety levels or knowledge regarding informal diagnosis and prescriptive programming.
 5. Teacher anxiety levels are not significantly related to knowledge regarding informal diagnosis and prescriptive programming.

Implications for Inservice Teacher Education

Several implications for inservice teacher education can be made from the results of this investigation and the accompanying literature review. One implication is that stages of concerns about the specific topic of the training should be assessed prior to conducting inservice training. This would avoid situations such as teachers with concerns dealing with their impact on students receiving training designed to address concerns about the task of teaching itself.

Administrators and teacher trainers attempting to implement inservice programs should look carefully at the goals of the inservice program. If the goal of the program is to increase knowledge, then a workshop or course designed to disseminate information should be implemented and evaluated along the knowledge dimension alone. If the goal of the inservice program is to increase knowledge and improve skills or teach new skills, then a workshop designed to disseminate information and allow opportunities to practice skills should be implemented and evaluated along the knowledge and skill dimensions. If the goal of the program is to improve attitudes, then a workshop designed to increase knowledge is not enough. Teachers should have opportunities to have contact with handicapped persons. Specific strategies addressing attitudes may also need to be incorporated in the training design. This type of program should be evaluated through behavioral changes reflecting changes in attitudes.

Inservice training in the past has not been designed based on best practice statements. Traditionally, someone decides that the days designated for inservice should be scheduled and general plans are made. Inservice training should be designed to incorporate as many of the identified best practice statements as possible. Administrators should be made aware of the fact that effective inservice doesn't just happen. For a program to be effective, it should be specifically designed with as many concepts from the best practice statements as feasible incorporated into it.

There are some implications specific to future training programs using the informal diagnosis and prescriptive programming workshop with a practicum experience design. Since teachers will be using the skills developed through this training in regular classrooms, it is suggested that when feasible, the practicum experience should include working with an individual student initially to practice the skills, then integrating these skills into the back-home situation with support from the practicum supervisors. Trainers should be aware that teachers' attitudes may not be effected by the workshop and practicum experience. If changing attitude is a major goal of the training, then strategies to specifically address attitudes may need to be incorporated into the design. Likewise, if alleviating teacher anxiety is a goal, specific strategies to do so may be needed.

Suggestions for Future Research

Further research is needed to substantiate the findings that training in informal diagnosis and prescriptive programming and a practicum experience do not improve teachers' attitudes toward mainstreaming handicapped students. Behavioral observations should be employed to measure attitudinal changes.

It appears that teacher attitudes were not influenced in this study. Further research is indicated to determine if the practicum experience were changed to provide opportunities to use informal diagnosis and prescriptive programming in a classroom situation rather than on a one-to-one basis would improve teacher attitudes toward mainstreaming.

Further research is warranted to substantiate the hypothesis that under stressful situations inservice teachers regress to self and survival concerns. Along this same line, research is needed to determine the stages of concerns of teachers toward mainstreaming.

This study unsuccessfully attempted to obtain reductions in teacher anxiety by increasing teachers' knowledge regarding informal diagnosis and prescriptive programming. Further research is needed to test other strategies to reduce teaching anxiety and stress.

At the outset of this investigation, the author undertook a review of the literature on inservice teacher education expecting to find best practice statements which had been substantially validated through research; this was not the case. Sixteen best practice statements which were supported by opinion, literature, questionnaires and evaluations of inservice training were generated. However, these statements in and of themselves have not been empirically tested. An extension of this investigation would be to attempt to validate these statements with empirical evidence. There are several ways this could be approached. One approach would be to design training which incorporated the principles behind all 16 of the best practice statements. This could systematically be tested against the same type of training with one best practice statement eliminated at a time until all 16 had been tested.

The training used in this study incorporated 75% of the concepts from the best practice statements and an effect on knowledge was obtained. If all of the best practice statements had been incorporated in the design, would the results have been different? Perhaps, some statements are applicable to all types of inservice training and some are specific to the goals of the training. For instance, "inservice should be offered at convenient times for the participants" may apply to any type of training. However, maybe inservice should be activity-based for training designed to increase or improve skills but it may not be as necessary if knowledge dissemination is the only desired outcome. It may be that there are certain best practices applicable to training designed to impact on knowledge with different statements applicable for training designed to impact on attitudes and still different statements applicable to training designed to impact on skills and behaviors. This remains to be investigated.

The recipients of the training may also have bearing on which best practices are applicable. Different statements may be important to incorporate when designing training for urban teachers than when designing training for rural teachers. Urban teachers may find college-based training more appealing than rural teachers. All of these questions remain to be answered.

Summary

Four major hypotheses were evaluated in this study. It was anticipated that inservice training would influence teachers' attitudes and anxiety levels as well as knowledge about informal diagnosis and prescriptive programming; however, this was not the case. Several explanations were offered for these findings. The major conclusions of this study were stated. Implications for inservice teacher education and suggestions for future research were discussed.

APPENDIX A
ID/PP KNOWLEDGE TEST

Definition Page for the Informal Diagnosis and
Prescriptive Programming Knowledge Test

Task Analysis is a process of breaking an objective into the small subtasks needed to complete it.

Error Pattern Analysis is a technique for gathering information about the errors a child makes. When using EPA, the teacher examines the responses made by a child and writes a statement(s) in behavioral terms about the errors he has made.

Systematic Modification is a process of restructuring subtasks in order to assess the amount and kind of assistance the child needs in order to do the subtask. If a child can't complete a certain subtask, the teacher can modify it so the child can complete it correctly.

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Source: Midwest Regional Resource Center, Informal Diagnosis and Prescriptive Programming: A Workshop, Des Moines, Iowa: Drake University, 1975.

Informal Diagnosis and Prescriptive
Programming Knowledge Test

1. A procedure(s) that does not require information about a child.
 - a. Task Analysis
 - b. Error Pattern Analysis
 - c. Prescriptive Programming
 - d. a and c
2. A procedure(s) that could be useful as a diagnostic tool.
 - a. Task Analysis
 - b. Error Pattern Analysis
 - c. Prescriptive Programming
 - d. a and b
3. Which of the following is true?
 - a. Task Analysis is a standardized diagnostic procedure that yields valid diagnostic information.
 - b. Error Pattern Analysis is a standardized diagnostic procedure that yields valid diagnostic information.
 - c. Error Pattern Analysis tries to control for all possible sources of error.
 - d. Task Analysis and Error Pattern Analysis are informal diagnostic procedures which do not guarantee validity.
4. List four principles to consider when evaluating a material to see if its characteristics match a child's learning characteristics. (4 points)
5. A reason(s) for using Error Pattern Analysis is:
 - a. to become more familiar with a child's strengths and weaknesses.
 - b. to ascertain points at which consistent errors are made.
 - c. to try to isolate skills needing remediation.
 - d. all of the above

6. What are the first two things to do when a child is referred to you?
 - a. Define the problem and begin formal diagnostic testing.
 - b. Define the problem and begin informal diagnostic testing.
 - c. Define the problem and identify what other kinds of information you need.
 - d. Define the problem and write behavioral objectives.

7. When applying the process of systematic modification, the two rules to follow are:
 - a. Make major alterations in the main subtasks but change as few subtasks as possible.
 - b. When modifying a task, make the alteration as minor as possible and make only one alteration in a task at a time.
 - c. Do an Error Pattern Analysis of the task and then make major alterations in the main subtasks.
 - d. Make at least two changes in every task and make the alterations after doing a task analysis of the objective.

8. Which of the following is not one of the potential uses of Task Analysis as described by Barbara Bateman?
 - a. Grouping learners
 - b. Readiness of learners
 - c. Reinforcement of learners
 - d. Motivation of learners.

A child was given the following problem as part of a math worksheet.

$$\frac{\quad}{\quad} = 5 + 4$$

9. Which of the following would not appear in a Task Analysis of this problem?
 - a. Can match symbols and quantities
 - b. Can match symbols and operation
 - c. Can remember the visual symbol of "9"
 - d. Can write the numeral "9"

15. A child is asked to spell orally the word "house". He does so incorrectly. Which is the first systematic modification of that task you would make?
- Give the child an incomplete sentence to read. Structure it so the word required to complete it is "house". Ask the child to read the sentence and complete it by writing in the missing word.
 - Ask the child to write the word "house" instead of spelling it orally.
 - Show the child a picture of a house and ask him to orally spell the word that correctly names the picture.
 - Give the child a sentence with "house" in it and ask him to point to the word "house".
16. Write a behavioral objective. Include in it three components. (3 points)
17. Task Analysis directs one's attention primarily to:
- the child.
 - the objective.
 - the teacher.
 - the environment.
18. Which of the following is not a step in Error Pattern Analysis?
- Identify the errors.
 - Describe the errors.
 - Task analyze the errors.
 - Write a tentative conclusion.

19. List three learning methods: (3 points)

EXAMINE MULTIPLICATION WORKSHEET I.

20. The following are possible sources of error. Which one can be ruled out as a source of error on Multiplication Worksheet I?
- a. Attending to the task
 - b. Understanding the language of directions
 - c. Hearing adequately
 - d. Writing numbers
21. Analyze Multiplication Worksheet I and write the major pattern of errors you find. (2 points)
22. All steps in a Task Analysis should be stated in words that represent:
- a. observable behaviors
 - b. processes
 - c. relationships
 - d. skills
23. What must be considered when evaluating a child's learning characteristics?
- a. What does he need to be taught?
 - b. Where does he need to start?
 - c. What is the best way to present information to him?
 - d. All of the above.

24. There are six questions to ask yourself when defining the child's problem. Which is not one?
- Who is affected?
 - What skills are deficit?
 - What kinds of information are needed to program for the child?
 - Are there ways to meet this problem?
25. List three systematic modifications for the following task. (3 points)

This is what the teacher says:

"Look at the example box..."

EXAMPLE

d	1
m	2
t	3
b	4

I am going to read a made-up word to you. Listen carefully and decide which letter makes the beginning sound of the word. Ready? Tuv...tuv. Which letter makes the beginning sound? (Wait for a response.). Good. The letter t does, so fill in the circle beside t. (Pause.). Now we will begin the test. Listen carefully to the words I am going to read to you. Decide which letter makes the beginning sound of each word and fill in the circle beside your answer. Ready?

This is the Task Analysis of the above task:

- attend to oral directions
- demonstrate an understanding of concepts in directions ("beginning sounds")
- locate correct item
- repeat stimulus word
- isolate beginning sound
- match letter sound and letter symbol (sound-symbol correspondence)
- select correct response by filling in the circle

Systematic Modifications:

-
-
-

MULTIPLICATION WORKSHEET 1

$$\begin{array}{r}
 1. \quad 247 \\
 \times 25 \\
 \hline
 1235 \\
 4940 \\
 \hline
 (5175)
 \end{array}$$

6175

$$\begin{array}{r}
 2. \quad 247 \\
 \times 801 \\
 \hline
 247 \\
 000 \\
 97400 \\
 \hline
 (97647)
 \end{array}$$

197847

$$\begin{array}{r}
 3. \quad 545 \\
 \times 247 \\
 \hline
 4815 \\
 1800 \\
 109000 \\
 \hline
 (1096615)
 \end{array}$$

134615

$$\begin{array}{r}
 4. \quad 247 \\
 \times 45 \\
 \hline
 1245 \\
 9880 \\
 \hline
 (100125)
 \end{array}$$

11115

$$\begin{array}{r}
 5. \quad 247 \\
 \times 42 \\
 \hline
 494 \\
 9880 \\
 \hline
 (10374)
 \end{array}$$

10374

The correct answers are written beneath the problem.

APPENDIX B

ATTITUDES TOWARD MAINSTREAMING SCALE

Mainstreaming Questionnaire

Please put the last 4 digits of your SS # _ _ _ _

Please read each statement carefully. Respond to every statement by circling the number that corresponds with your opinion. Use the following scale:

Strongly Agree	Agree	Somewhat Agree	Disagree Somewhat	Disagree	Strongly Disagree
1	2	3	4	5	6

Remember: Please respond to each statement.

- 1 2 3 4 5 6 1. Students with behavior disorders who cannot readily control their own behavior should be in regular classrooms.
- 1 2 3 4 5 6 2. Blind students who cannot read standard printed material should be in regular classrooms.
- 1 2 3 4 5 6 3. Students with cerebral palsy who cannot control movement of one or more of their limbs should be in regular classrooms.
- 1 2 3 4 5 6 4. In general, mainstreaming is a desirable educational practice.
- 1 2 3 4 5 6 5. Students who stutter should be in regular classrooms.
- 1 2 3 4 5 6 6. Students with speech difficulty to understand should be in regular classrooms.
- 1 2 3 4 5 6 7. Students with diabetes should be in regular classrooms.
- 1 2 3 4 5 6 8. Educable mentally retarded students should be in regular classrooms.
- 1 2 3 4 5 6 9. Students who present persistent discipline problems should be in regular classrooms.
- 1 2 3 4 5 6 10. Students should have the right to be in regular classrooms.
- 1 2 3 4 5 6 11. Physically handicapped students not confined to wheelchairs should be in regular classrooms.
- 1 2 3 4 5 6 12. Students with epilepsy should be in regular classrooms.

Please put the last 4 digits of your SS # _ _ _ _

Strongly Agree		Somewhat Agree		Somewhat Disagree		Strongly Disagree	
1	2	3	4	5	6		
1	2	3	4	5	6	13.	Hearing impaired students, who are not deaf, should be in regular classrooms.
1	2	3	4	5	6	14.	Physically handicapped students confined to wheelchairs should be in regular classrooms.
1	2	3	4	5	6	15.	It is feasible to teach gifted, normal, and mentally retarded students in the same class.
1	2	3	4	5	6	16.	Visually handicapped students who can read standard printed material should be in regular classrooms.
1	2	3	4	5	6	17.	Mainstreaming will be sufficiently successful to be retained as a required educational practice.
1	2	3	4	5	6	18.	Deaf students should be in regular classrooms.

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Source: Berryman, J. D., Neal, W. R. and Robinson, J. E. The validation of a scale to measure attitudes toward the classroom integration of disabled students. Journal of Educational Research, 1980, 73, 199-203.

APPENDIX C
TEACHING ANXIETY SCALE

Teaching Questionnaire

Please put the last 4 digits of your SS # _ _ _ _

Your answers will be kept strictly confidential. Your professors and teaching supervisors will not have access to this information.

Instructions: Please read each question carefully. Answer every question, even if it seems vague to you or difficult to answer. Circle only one number for each question. Be sure the circle goes only around one number.

Use the following scale for all questions:

Almost Never 1	Infrequently 2	Occasionally 3	Frequently 4	Almost Always 5
1 2 3 4 5	1.	I feel calm and collected when I think about holding parent-teacher conferences.		
1 2 3 4 5	2.	If I have trouble answering a student's questions, I find it difficult to concentrate on questions that follow.		
1 2 3 4 5	3.	I feel uncomfortable when I speak before a group.		
1 2 3 4 5	4.	I feel calm when I am preparing lessons.		
1 2 3 4 5	5.	I'm worried whether I am a good teacher.		
1 2 3 4 5	6.	I find teaching a satisfying profession.		
1 2 3 4 5	7.	I would feel calm and collected if a student's parent observed in my classroom.		
1 2 3 4 5	8.	I feel inferior to other teachers in my school.		
1 2 3 4 5	9.	I feel that students will follow my instructions.		
1 2 3 4 5	10.	I feel secure with regard to my ability to keep a class under control.		
1 2 3 4 5	11.	I'm less happy teaching than I thought I'd be.		
1 2 3 4 5	12.	I feel nervous when I am being observed by my supervisor.		

Please put the last 4 digits of your SS # _ _ _ _

- | Almost
Never | Infrequently | Occasionally | Frequently | Almost
Always | |
|-----------------|--------------|--|------------|------------------|--|
| 1 | 2 | 3 | 4 | 5 | |
| 1 2 3 4 5 | 13. | I feel confident about my ability to improvise in the classroom. | | | |
| 1 2 3 4 5 | 14. | I feel other teachers think I'm very competent. | | | |
| 1 2 3 4 5 | 15. | I feel panicky when a student asks me a question I can't answer. | | | |
| 1 2 3 4 5 | 16. | I feel anxious because I don't know yet whether I really want to be a teacher. | | | |
| 1 2 3 4 5 | 17. | I feel better prepared for teaching than other teachers in my school. | | | |
| 1 2 3 4 5 | 18. | Lack of rapport with my students is one of my biggest worries. | | | |
| 1 2 3 4 5 | 19. | I would feel anxious if the principal informed me he was coming to my class to observe. | | | |
| 1 2 3 4 5 | 20. | I find it easy to speak up in the staff room. | | | |
| 1 2 3 4 5 | 21. | I worry about being able to keep the students interested in what I teach them. | | | |
| 1 2 3 4 5 | 22. | I find it easy to admit to the class that I don't know the answer to a question a student asks. | | | |
| 1 2 3 4 5 | 23. | Deciding how to present information in the classroom makes me feel uncertain. | | | |
| 1 2 3 4 5 | 24. | I feel I have good recall of the things I know when I am in front of the class. | | | |
| 1 2 3 4 5 | 25. | I feel I am as competent in the classroom as other teachers in my school. | | | |
| 1 2 3 4 5 | 26. | I'm concerned about how to use my testing of students as a useful indication of how effectively I'm teaching them. | | | |
| 1 2 3 4 5 | 27. | I'm worried that differences in background between my students and me prevent me from teaching effectively. | | | |

Please put the last 4 digits of your SS # _ _ _ _

Almost Never	Infrequently	Occasionally	Frequently	Almost Always
1	2	3	4	5

1 2 3 4 5 28. I am certain that my own personal "hang-ups" do not hinder my teaching effectiveness.

1 2 3 4 5 29. I'm uncertain whether I can tell the difference between really seriously disturbed students and those who are merely "goofing off" in class.

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Source: Parsons, J. S., Assessment of Anxiety Using the Teaching Anxiety Scale: Manual and Research Report. Paper presented at the meeting of the American Educational Research Association, 1973. (ERIC Document Reproduction Service No. ED063 257).

APPENDIX D
DEMOGRAPHIC DATA SHEET

Demographic Data

Please write your Social Security Number _____

1. Female _____ Male _____
2. Age: 20-29 _____ 30-39 _____ 40-49 _____ 50-59 _____ 60-69 _____
3. Highest degree earned:
Associate _____ Bachelor _____ Masters _____ Specialist _____
Doctorate _____
4. How many years (including this one) have you been teaching?

5. My role in my school is:
elementary classroom teacher _____ grade(s) _____
secondary classroom teacher _____ grade(s) _____
subject(s) _____
special education teacher _____
subject specialist (i.e., art, music, etc.) _____
grade(s) _____ subject(s) _____
administrator _____
substitute teacher _____
other (specify) _____
6. How many years have you been involved in mainstreaming
handicapped students (including this year)?
Never _____ 1 year _____ 2 yrs. _____ 3yrs. _____ 4 yrs. _____ 5yrs. + _____
7. Have you received formal training in mainstreaming
(workshops, courses)?
No _____ yes _____ Briefly describe: _____

8. How many credit hours have you completed in Special Edu-
cation courses? _____

APPENDIX E

FREQUENCY DISTRIBUTION,
YEARS OF TEACHING EXPERIENCE

Frequency Distribution,
Years of Teaching Experience

# Years	f Elementary Group	f Secondary Group	f Control Group	f Total
0	1	-	-	1
1	2	1	-	3
2	-	2	1	3
3	2	5	-	7
4	2	1	1	4
5	-	-	3	3
6	3	1	-	4
7	3	2	1	6
8	1	2	1	4
9	2	1	1	4
10	2	3	1	6
11	-	1	2	3
12	1	2	-	3
13	2	1	1	4
14	1	2	1	4
15	1	-	2	3
16	2	-	-	2
17	-	-	1	1
18	-	-	-	-
19	-	-	-	-
20	-	2	-	2
21	-	1	-	1
22	-	1	2	3
23	1	-	-	1
24	-	-	-	-
25	-	-	-	-
26	1	-	-	1
27	-	-	-	-
28	-	-	-	-
29	-	-	-	-
30	1	-	-	1

# Years	f Elementary Group	f Secondary Group	f Control Group	f. Total
31	-	-	-	-
32	-	-	-	-
33	-	-	-	-
34	-	-	-	-
35	1	-	-	1
36	-	-	-	-
37	-	-	1	1

APPENDIX F
PRACTICUM
DAILY LESSON PLANS

Daily Learning Plan

Date _____

Obj. #	Methods/Materials/Setting	Estimated Time	Reinforcement	Learning Outcome

APPENDIX G
PRACTICUM
INDIVIDUAL EDUCATION PLAN

Individual Education Plan

Student's Name _____ Sex: M _____ F _____

Age _____ Birth Date _____ Grade _____

Parents or Guardian _____ Address _____

EVALUATION PROFILE

	LOW		AVERAGE		HIGH
Overall Intellectual Functioning	1	2	3	4	5
Academic Skill Areas					
Reading	1	2	3	4	5
Word recognition	1	2	3	4	5
Oral comprehension	1	2	3	4	5
Arithmetic computation	1	2	3	4	5
Arithmetic reasoning	1	2	3	4	5
Spelling	1	2	3	4	5
Screening					
Vision	1	2	3	4	5
Hearing	1	2	3	4	5
Correlated Areas Assessed					
Auditory perception	1	2	3	4	5
Visual perception	1	2	3	4	5
Gross motor coordination	1	2	3	4	5
Fine motor coordination	1	2	3	4	5
Oral language comprehension	1	2	3	4	5
Oral language expression	1	2	3	4	5
Social-Emotional	1	2	3	4	5

Student's Name _____

ACADEMIC ANALYSIS

1. Are the child's basic skills at grade level for his current grade placement?

-Reading

-Arithmetic

-Spelling

2. What skill components are missing?

-Reading

-Arithmetic

-Spelling

-Other

3. Does he demonstrate problems in? (If yes, describe.)

-Listening

-Taking notes

-Classroom discussion

-Chalkboard presentations

-Completing homework

-Completing assignments in class

-Taking tests

Student's Name _____

4. Are there vision, hearing, speech, or health problems?
5. Can he do the work expected of his peers? (NOTE: If No, this is a programming problem which will involve careful arrangement of antecedent events.)
6. Is he motivated to the work? (NOTE: If No, this is a programming problem which will involve careful attention to consequent events).
7. What skill strengths and interests can be used in programming?
8. What materials and methods of instruction can be used in programming?
9. Are there specific forms of communication which are most likely to help this child?
 - Receiving information
 - Expressing himself

Student's Name _____

Baseline

In reference to objectives, what are the current levels of student knowledge and skill, and/or current learning problems?

Student's Name _____

Annual Goal - Priority # () _____

Short Term Objectives (Written in measurable terms)	Name & Position of Person Responsible	Hours Per Week	Implemen- tation Date	Completion Date	Special Methods and/or Materials	Comments

APPENDIX H

COVER LETTER TO CONTROL GROUP FOR PRETEST



AREA EDUCATIONAL RESOURCE CENTER

SALINA CENTER

2022 CENTURY DRIVE

PHONE (913) 823-7263

SALINA HANDBOOK

WALT MICKLER, Coordinator

DEA GELLIAN, Resource Specialist

June 1, 1981

Dear Teacher:

The Area Educational Resource Center and the Central Kansas Cooperative are attempting to evaluate the effectiveness of their inservice training program. In order to determine its effectiveness, a graduate student from the University of Florida is asking participants in the training program and teachers who have not received the training to complete questionnaires.

Your name has been selected at random from teachers in Salina to help in this evaluation attempt. Enclosed you will find a copy of a questionnaire which has three parts. We ask that you complete this questionnaire and return it in the enclosed envelope by June 12th. You will receive a second copy of the questionnaire the last week in June and will be asked to complete that also and return it to us by July 10th. The questionnaire takes approximately 30 minutes to complete. All information will be treated confidentially. No one in Salina will see your answers.

We realize that your time is important and would like to offer an incentive for your taking the time to help us. If you complete both questionnaires and mail them on time, you will be eligible for a drawing to receive \$50 worth of informational or instructional materials of your choice.

In order for us to do an effective job of evaluating our program, it is important that we have your cooperation. Please take the time to complete the questionnaire and return it to us. You might be the winner of the drawing! Your cooperation will be greatly appreciated.

Sincerely,

Walt Mickler, Coordinator

Martha McAdams, Graduate Student

WM/MM/mb

* PROVIDING EDUCATIONAL SERVICES FOR CENTRAL KANSAS *
PROFESSIONAL STAFF DEVELOPMENT
ASSESS PROFESSIONAL NEEDS • LOCATE & LINK RESOURCES • PROVIDE SERVICES

ANDOVER - U.S.D. #104
USA LAKE SUPT
PIMA VALLEY - U.S.D. #100
TAMPA - PULASKI SUPT

CHICAGO - U.S.D. #101
BENTONVILLE SUPT
EL SALING - U.S.D. #101
EN T. MARLBOROUGH SUPT

ELIZABETH - U.S.D. #101
GEORGE W. BARTON SUPT
BERKSHIRE - U.S.D. #101
L.S. MILLER SUPT

SENALE - U.S.D. #101
SOUTH LITTON SUPT
MIDLAND - U.S.D. #101
N. W. MILLER SUPT

SENALE - U.S.D. #101
SENALE - U.S.D. #101
SENALE - U.S.D. #101
SENALE - U.S.D. #101

SENALE - U.S.D. #101
SENALE - U.S.D. #101
SENALE - U.S.D. #101
SENALE - U.S.D. #101

SENALE - U.S.D. #101
SENALE - U.S.D. #101
SENALE - U.S.D. #101
SENALE - U.S.D. #101

APPENDIX I

FOLLOW UP LETTER TO CONTROL
GROUP FOR PRETEST



AREA EDUCATIONAL RESOURCE CENTER

SAUNA CENTER

3033 CANTERBURY DRIVE

PHONE (313) 823-1262

SAUNA KANSAS 67201

WALT MICKLER, Coordinator

DEA DELLER, Resource Specialist

June 15, 1981

Dear Teacher:

Recently you received a letter asking you to help us evaluate our inservice training program. As of yet we have not received a response from you.

We know what it's like to have many demands on your time. Remember we are offering an incentive for your help. If you complete the enclosed questionnaire and the one that will be sent to you the last week in June, you will be eligible for a drawing to receive \$50 worth of informational or instructional materials of your choice. If the questionnaire takes you 30 minutes to complete, you may be earning \$50 an hour. That's pretty good pay!

More importantly; however, your help is needed to effectively evaluate our training program. Although you have not received the training, we need your response. It is important for us to make a comparison between teachers who have taken the training and those who have not.

Won't you please take the time to help us by completing and mailing the enclosed questionnaire? Thank you for your time.

Sincerely,

Walt Mickler, Coordinator

Martha McAdams, Graduate Student

WM/MM/mb

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ASHLEY-020 400
GUTH LANE SUITE
TWIN FALLS 83301
BUTTE 83401

CHAMPA-020 400
EDMUND SUITE 100
E. 10TH & W. 10TH
CHAMPA 83401

ELLSWORTH-020 400
GEORGE W. ANDERSON SUITE
EDMUND 83401
E. 10TH & W. 10TH

LOMAVITA-020 400
GUTH LANE SUITE
HIGHLAND 83401
W. 10TH & W. 10TH

SARAL HOTA-020 400
GUTH LANE SUITE
SAUNA 83401
SAUNA 83401

SOLONOR-020 400
JILL GARY SUITE
SOUTHWEST OF SAUNA 83401
FRANK CROSBY 83401

APPENDIX J

COVER LETTER TO CONTROL GROUP FOR POSTTEST



AREA EDUCATIONAL RESOURCE CENTER

SALINA CENTER

2823 GANTENBURY DRIVE

PHONE (913) 823-7263

SALINA, KANSAS 67401

WALT MICKLER, Coordinator

DEA DELLER, Resource Specialist

June 26, 1981

Dear Teacher:

Thank you for completing our first questionnaire. Enclosed you will find a second copy. Please complete the questionnaire and return it to us in the enclosed stamped self-addressed envelope. As mentioned previously, your answers will be treated confidentially. No one in Salina will see your individual answers.

The drawing for \$50 of instructional or informational material will be conducted the latter part of July. The lucky winner will be contacted at that time.

By responding to both of our questionnaires, you are helping us evaluate the effectiveness of our inservice training program. Without your help this would not have been possible. We appreciate your cooperation.

If you have any questions or would like to know the name of the winner of the drawing, please call 823-7263. Again, thank you for your help.

Sincerely,

Walt Mickler, Coordinator

Martha McAdams, Graduate Student

WM/MM/mb

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BALDRE, D.E.D. REG.
SLOD & LADD, SUPT.
TOWNS, T. SUPT.
TOWNS, T. SUPT.

CHAPMAN, D.E.D. REG.
CHAPMAN, D.E.D. REG.
BILBAUM, D.E.D. REG.
PA & N. HARRIS, SUPT.

ELLENBETH, D.E.D. REG.
SCOTT & HARRIS, SUPT.
BORDEN, D.E.D. REG.
L. & HARRIS, SUPT.

SHAWNEE, D.E.D. REG.
BENTON, D.E.D. REG.
BENTON, D.E.D. REG.
W. W. PETERSON, SUPT.

BUNAL, D.E.D. REG.
BUNAL, D.E.D. REG.
BUNAL, D.E.D. REG.
LLOYD, SUPT.

SCOTLAND, D.E.D. REG.
BELL, SUPT.
SCOTLAND, D.E.D. REG.
FRANK, SUPT.

APPENDIX K

FOLLOW UP LETTER TO CONTROL
GROUP FOR POSTTEST



AREA EDUCATIONAL RESOURCE CENTER

SALINA CENTER

2023 CHATEAUBUFF DRIVE

PHONE (913) 827-7263

SALINA, KANSAS 67401

WALT MICKLER, Coordinator

DEA OELLEN, Resource Specialist

July 10, 1981

Dear Teacher:

A short time ago you completed a questionnaire to help us evaluate our inservice training program. We want to thank you for completing that first questionnaire. Recently you received a letter asking you to complete a second copy of the same questionnaire. As of yet we have not received a response from you.

Your help is needed to effectively evaluate our training program. Although you have completed the questionnaire once, we need for you to answer the questionnaire a second time.

Remember we are offering an incentive for your help. If you complete the enclosed questionnaire, you will be eligible for a drawing to receive \$50 worth of instructional or informational materials of your choice. Since you completed the first questionnaire, you are one of only 30 teachers eligible for this drawing.

More importantly; however, in order for us to do an effective job of evaluating our program, it is important that we have both your first and second questionnaires. Please take the time to help us by completing and mailing the enclosed questionnaire.

Thank you for your time and effort.

Sincerely,

Walt Mickler, Coordinator

Martha McAdams, Graduate Student

WM/MM/mb

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PROFESSIONAL STAFF DEVELOPMENT
ASSESS PROFESSIONAL NEEDS • LOCATE & LINK RESOURCES • PROVIDE SERVICES

ANDRE B & B HST
LOD & LANE HST
TWIN FALLS & B HST
MAGNET PUEBLO HST

CHAPMAN B & B HST
KEPNER HST
SALINA B & B HST
BY T & A HST

ELLSWORTH B & B HST
GEORGE W. ARBUTT HST
REDWATER B & B HST
L.S. WILSON HST

SHAWNEE B & B HST
SOUTH LUTON HST
PENNAHILLS B & B HST
W. W. JONES HST

SENIAL HST
ELMER HST
SALINA B & B HST
LUTON HST

SOLDIER B & B HST
SOL. GRAY HST
SOUTHWEST OF SALINA B & B HST
TERRACE HST

REFERENCE NOTES

1. McAdams, M. Informal Diagnosis and Prescriptive Programming Summer Workshop and Practicum 1980: An Evaluation Report. Salina, Kansas. Area Educational Resource Center, 1981.
2. Morsink, C. Personal communication, March, 1981.

REFERENCES

- Adams, G., & Cohen, A. Children's physical and interpersonal characteristics that effect student-teacher interactions. The Journal of Experimental Education, 1974, 43, 1-5.
- Alberto, P. A., Castricone, N. R., & Cohen, S. B. Mainstreaming: Implications for training regular class teachers. Education and Training of the Mentally Retarded, 1978, 13, 90-92.
- Algozzine, R. What teachers perceive-- Children receive? Communication Quarterly, 1976, 24(3), 41-47.
- Allport, G. W. The Name of Prejudice. Cambridge, Massachusetts: Addison Wesley, 1954.
- Allshouse, C., & Ondell, V. L. C.A.S.E. Research Committee Information Packet on Inservice Training. Indiana University: C.A.S.E., 1979.
- Andrews, T. E. (Ed.) Inservice Recommendations. Gainesville, Florida: University of Florida/Alachua County Schools-Teacher Crops Project, 1980.
- Baker, J. L., & Gottlieb, J. Attitudes of teachers toward mainstreaming retarded children. In J. Gottlieb (Ed.), Educating Mentally Retarded Persons in the Mainstream. Baltimore: University Park Press, 1980.
- Becker, H. Social class variables in the teacher-pupil relationship. Journal of Educational Sociology, 1952, 25, 451-465.
- Bensky, J. M., Shaw, S. F., Gouse, A. S., Bates, H., Dixon, B., & Beane, W. E. Public law 94-142 and stress: A problem for educators. Exceptional Children, 1980, 47, 24-29.
- Berryman, J. D., & Neal, W. R. The cross validation of the attitudes toward mainstreaming scale (ATMS). Educational and Psychological Measurement, 1980, 40, 469-474.
- Berryman, J. D., Neal, W. R., & Robinson, J. E. The validation of a scale to measure attitudes toward the classroom integration of disabled students. Journal of Educational Research, 1980, 73, 199-203.

- Borg, W. R., & Gall, M. D. Educational Research: An Introduction (3rd ed.). New York: Longman, 1979.
- Brimm, J. L., & Tollett, D. J. How do teachers feel about inservice education? Educational Leadership, 1974, 31, 521-525.
- Brophy, J. E., & Good, T. L. Teachers' communication of differential expectations for children's classroom performance. Journal of Educational Psychology, 1970, 61, 365-374.
- Brophy, J. E., & Good, T. Teacher-Student Relationships: Causes and Consequences. Boston: Holt, Rinehart, Winston, 1974.
- Campbell, D. Z., & Stanley, J. C. Experimental and Quasi-Experimental Designs for Research. Chicago: Rand-McNally College Publishing Company, 1963.
- Childress, J. R. Inservice education of teachers. In R. L. Ebel (Ed.), Encyclopedia of Educational Research. London: McMillan, Co., 1969.
- Claiborn, W. L. Expectancy effects in the classroom: A failure to replicate. Journal of Educational Psychology, 1969, 60, 377-383.
- Clark, S. L. A study of the relationship between secondary student teachers' anxiety levels and their assignation of letter grades under stimulated conditions (Doctoral dissertation, Columbia University, 1972). Dissertation Abstracts International, 1972, 32, 3834A. (University Microfilms No. 72-4166).
- Coates, B. White adult behaviors toward black and white children. Child Development, 1972, 43, 143-154.
- Coates, T. J., & Thoresen, C. E. Teacher anxiety: A review with recommendations. Review of Educational Research, 1976, 46(2), 159-184.
- Cole, R. W., & Dunn, R. A new lease on life for the handicapped: Ohio copes with 94-142. Phi Delta Kappan, 1977, 10, 3-6.
- Corono, L., & Clark, C. M. An aptitude-treatment-interaction approach to inservice teacher training. In L. Rubin (Ed.), The Inservice Education of Teachers. Boston: Allyn and Bacon, Inc., 1978.
- Cruikshank, D. R., Lorish, C., & Thompson, L. What we think we know about inservice education. Journal of Teacher Education, 1979, 30(1), 27-32.

- Cruikshank, W. M., & Paul, J. L. The psychological characteristics of brain-injured children. In W. M. Cruikshank (ed.), Psychology of Exceptional Children and Youth (3rd ed.). Englewood Cliffs, N.J.: Prentice-Hall, 1971.
- Curran, T. J. The influence of ecological fit on teachers' expectations (Doctoral Dissertation, Pennsylvania State University, 1977). Dissertation Abstracts International, 1977, 38, 701-A. (University Microfilms No. 77-17682).
- Data, L., Schaefer, E., & Davis, M. Sex and scholastic aptitude as variables in teachers' ratings of the adjustment and classroom behavior of Negro and other seventh grade students. Journal of Educational Psychology, 1968, 59, 94-101.
- Dole, W., Honack, G., & Kefer, E. Teachers' perceptions: Do they make a difference? Journal of Assessment for the Study of Perception, 1970, 1, 21-30.
- Doyal, G. T., & Forsyth, R. A. The relationship between teacher and student anxiety levels. Psychology in the Schools, 1973, 10, 231-233.
- Edelfelt, R. A. Inservice education of teachers: Priority for the next decade. Journal of Teacher Education, 1974, 25(3), 250-252.
- Effron, R. E., & Effron, H. Y. Measurement of attitudes toward the retarded and an application with educators. American Journal of Mental Deficiency, 1967, 72, 100-107.
- Fuller, F. F. Concerns of teachers: A developmental conceptualization. American Educational Research Journal, 1969, 6(2), 207-226.
- Fuller, F. F. A conceptual framework for a personalized teacher education program. Theory into Practice, 1974, 13, 112-122.
- Fuller, F. F., Parsons, J. S., & Watkins, J. E. Concerns of Teachers: Research and Reconceptualization. Paper presented at the meeting of the American Educational Research Association, 1974. (ERIC Document Reproduction Service No. ED 091 439).
- Games, P. A., Gray, S., Herron, W. L., & Pitz, G. F. Analysis of Variance with Repeated Measures Main Program. University Park Pennsylvania: The Pennsylvania State University Computer Center, 1974.
- Gickling, E. E., & Theobald, J. T. Mainstreaming's affect or effect. Journal of Special Education, 1975, 2, 317-328.

- Good, T. L., & Brophy, J. E. Behavioral expression of teacher attitudes. Journal of Educational Psychology, 1972, 63, 617-624.
- Gottlieb, J. Semmel, M. D., & Veldman, D. J. Correlates of social status among mainstreamed mentally retarded children. Journal of Educational Psychology, 1978, 70, 396-405.
- Graham, S., Hudson, Z., Burdick, N. B., & Carpenter, G. Educational personnel's perceptions of mainstreaming and resource room effectiveness. Psychology in the Schools, 1980, 17, 128-134.
- Haring, N. G. A study of the attitudes of classroom teachers toward exceptional children (Doctoral dissertation, Syracuse University, 1956). Dissertation Abstracts, 1957, 17, 103-104. (University Microfilms No. 57-166).
- Harvey, J. Future trends in personnel preparation. Exceptional Children, 1976, 43, 148-150.
- Hass, C. G. Inservice education today. In N. B. Henry (ed.), Inservice Education: 56th Yearbook of the National Society for the Study of Education, Part I. Chicago: The National Society for the Study of Education, 1957.
- Havelock, R. G., & Havelock, M. C. Training for Change Agents. Ann Arbor, Michigan: Institute for Social Research, 1973.
- Heller, H. W. Focus on inservice education. Teacher Education/Special Education, 1978, 2(1), 3-6.
- Hudson, F., Graham, S., & Warner, M. Mainstreaming: An examination of the attitudes and needs of regular classroom teachers. Learning Disability Quarterly, 1979, 2(3), 58-62.
- Hutson, H. Inservice Best Practices: The Learnings of General Education. Bloomington, Indiana: National Inservice Network, 1979.
- Jensen, A. R. Review of "Pygmalion in the Classroom." American Scientist, 1969, 51, 44A-45A.
- Johnson, M. Looking back at thinking ahead: 87 educators in session. In R. A. Edelfelt and M. Johnson (eds.), Rethinking Inservice Education. Washington, D.C.: National Education Association, 1975.
- Kadson, L. M., & Kelly, D. Simulation inservice education for teachers in reading. The Journal of Experimental Education, 1969, 28, 79-86.

- Keavney, G., & Sinclair, K. E. Teacher concerns and teacher anxiety: A neglected topic of classroom research. Review of Educational Research, 1978, 48(2), 273-290.
- King, J. C., Hayes, P. C., & Newman, I. Some requirements for successful inservice education. Phi Delta Kappan, 1977, 58, 686-687.
- Koon, J. R. Effects of expectancy, anxiety, and task difficulty on teacher behavior (Doctoral dissertation, Syracuse University, 1971). Dissertation Abstracts International, 1971, 32, 821A. (University Microfilms No. 71-18492).
- Kracht, C. R., & Casey, J. P. Attitudes, anxiety, and student teaching performance. Peabody Journal in Education, 1968, 45, 214-217.
- Kyriacou, C., & Sutcliffe, J. Teacher stress: A review. Educational Review, 1977, 29, 249-306.
- Lawrence, G. Patterns of Effective Inservice Education: A State of the Art Summary of Research on Materials and Procedures for Changing Teacher Behaviors in Inservice Education. Report prepared for the State of Florida, Department of Education, 1974.
- Lee, W. S. Human relations training for teachers: The effectiveness of sensitivity training. California Journal of Educational Research, 1970, 21, 28-34.
- Lippett, R., & Fox, R. Development and maintenance of effective classroom learning. In Louis J. Rubin (ed.), Improving Inservice Education: Proposals and Procedures for Change. Boston: Allyn and Bacon, 1971.
- Mackler, B. Grouping in the ghetto. Education and Urban Society, 1969, 2, 80-96.
- Mandler, G., & Sarason, S. B. A study of anxiety and learning. Journal of Abnormal and Social Psychology, 1952, 47, 166-173.
- Martin, E. W. Some thoughts on mainstreaming. Exceptional Children, 1974, 41, 150-153.
- Mattsson, K. D. Personality traits associated with effective teaching in rural and urban secondary schools. Journal of Educational Psychology, 1974, 66, 123-128.
- McMillian, D. L., Jones, R. L., & Meyers, C. E. Mainstreaming the mildly retarded: Some questions, cautions and guidelines. Mental Retardation, 1976, 14, 3-10.

Meyen, E. L. Exceptional Children and Youth: An Introduction. Denver: Love Publishing Co., 1978.

Midwest Regional Resource Center. Informal Diagnosis and Prescriptive Programming: A Workshop. Des Moines, Iowa: Drake University, 1975 (revisions in 1976, 1978, 1979).

Miller, W. Dealing with Stress: A Challenge for Educators. Bloomington, Indiana: Phi Delta Kappa Educational Foundation, 1979. (ERIC Document Reproduction Service No. ED 178 522).

Moore, J., & Fine, M. J. Regular and special class teachers' perceptions of normal and exceptional children and their attitudes toward mainstreaming. Psychology in the Schools, 1978, 15, 253-259.

Moskowitz, G. The Flint System. In A. Simon (ed.), Mirrors for Behavior: An Anthology of Classroom Observations Instruments. Philadelphia, PA: Research for Better Schools, 1967.

Moskowitz, G., & Hayman, J. L. Interaction patterns of first-year, typical and "best" teachers in inner-city schools. The Journal of Teacher Education, 1974, 67, 224-230.

National Council of States on Inservice Education. An Annotated Bibliography on Inservice Education. Syracuse: Syracuse University, 1976.

Palardy, J. M. What teachers believe--What children achieve. Elementary School Journal, 1969, 69, 370-374.

Parsons, J. S. Assessment of Anxiety Using the Teaching Anxiety Scale: Manual and Research Report. Paper presented at the meeting of the American Educational Research Association, 1973. (ERIC Document Reproduction Service No. ED 063 257).

Peale, N. O. The Power of Positive Thinking. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1952.

Petrusick, M. M. Some relationships between anxiety and the classroom behavior of student teachers (Doctoral dissertation, University of Washington, 1966). Dissertation Abstracts, 1966, 27, 1691A. (University Microfilms No. 66-12038).

Reynolds, W. M., & Greco, V. T. The reliability and validity of a scale for measuring teachers' attitudes towards mainstreaming. Educational and Psychological Measurement, 1980, 40, 463-469.

- Rist, R. Student social class and teacher expectations: The self-fulfilling prophecy in ghetto education. Harvard Educational Review, 1970, 40, 411-451.
- Rosenthal, R., & Jacobson, L. Pygmalion in the Classroom. New York: Holt, Rinehart & Winston, 1968.
- Rowe, M. B. Science, silence, and sanctions. Science and Children, 1969, 6, 11-13.
- Rubin, L. A field-based research agenda. In L. Rubin (ed.), The Inservice Education of Teachers: Trends, Processes and Prescriptions. Boston: Allyn and Bacon, 1978.
- Rubovits, P. C., & Moehr, M. C. Pygmalion black and white. Journal of Personality and Social Psychology, 1973, 25, 210-218.
- Rude, C. R. Trends and priorities in inservice training. Exceptional Children, 1978, 45, 172-176.
- Saettler, H. Current priorities in personnel preparation. Exceptional Children, 1976, 43, 147-176.
- Salvia, J., & Ysseldyke, J. E. Assessment in Special and Remedial Education. Boston: Houghton Mifflin Company, 1978.
- Sarason, S. B., Lighthall, F. F., Davidson, K. S., Waite, R. R., & Ruebush, B. K. Anxiety in Elementary School Children. New York: John Wiley, 1960.
- Schmid, R., & McAdams, M. Inservice education. In A. H. Fink and C. Kokaska (eds.), Career Education for the Behavior Disordered. Reston, VA: Council for Exceptional Children, 1981.
- Schmid, R., & Scranton, T. R. A field-trial of the longitudinal inservice training model. Education, 1972, 93, 195-198.
- Selye, H. The Stress of Life. New York: McGraw-Hill, 1956.
- Shotel, J. R., Iano, R. P., & McGattigan, J. F. Teacher attitudes associated with the integration of handicapped children. Exceptional Children, 1972, 38, 677-683.
- Siantz, J. A review of inservice education: Models, methods, results and implications for practitioners. In N. L. Kaye and L. C. Burrello, Training Manual on Inservice for Regular Education Personnel. In Press.

- Siantz, J., & Moore, E. Inservice programming and preservice priorities. In J. Smith (ed.), The Map, The Mission and The Mandate. Boothwyn, PA: Educational Resources Center, 1978.
- Silberman, M. L. Behavioral expression of teachers' attitudes toward elementary school students. Journal of Educational Psychology, 1969, 60, 402-407.
- Smith, R. J., & Otto, W. Changing teacher attitudes toward teaching reading in the content areas. Journal of Reading, 1969, 12, 299-304.
- Snow, R. Unfinished Pygmalion. Contemporary Psychology, 1969, 14, 197-199.
- Sparks, D., & Hammond, J. Managing Teacher Stress and Burn-out. Washington, DC: ERIC Clearinghouse on Teacher Education, 1981.
- Strauss, S. Guidelines for analysis of research reports. Journal of Educational Research, 1969, 63, 165-169.
- Styles, K., & Cavanagh, G. Stress in teaching and how to handle it. English Journal, 1977, 66, 76-79.
- Taylor, J. A. A personality scale of manifest anxiety. Journal of Abnormal and Social Psychology, 1953, 48, 285-290.
- Texas Education Agency. Review of the literature. In A Review of Inservice Education in Texas. Austin: Texas Education Agency, 1978.
- Thorndike, R. L. Review of "Pygmalion in the classroom." American Educational Research Journal, 1968, 5, 708-711.
- Treese, W. D. The effects of microteaching on teaching attitudes, anxieties and values (Doctoral dissertation, University of Missouri, 1971). Dissertation Abstracts International, 1972, 33, 217A-218A. (University Microfilms, No. 72-19253).
- Turnbull, H. R., & Turnbull, A. P. Free Appropriate Public Education: Law and Implementation. Denver: Love Publishing Co., 1978.
- Voeltz, L., Bailey, E., Nakamura, A., & Azama, M. A needs assessment of special education inservice training priorities for teachers. Educational Perspectives, 1979, 18, 12-17.

- Washburne, C., & Heil, L. M. What characteristics of teachers affect childrens' growth? The School Review, 1960, 68, 420-428.
- Webster's New World Dictionary. New York: World Publishing Company, 1966.
- Wechsler, H., Suarez, A. C., & McFadden, M. Teachers' attitudes toward the education of physically handicapped children: Implications for the implementation of Massachusetts Chapter 766. Journal of Education, 1975, 157 (1), 17-24.
- Weiskopf, P. E. Burn-out among teachers of exceptional children. Exceptional Children, 1980, 47, 18-23.
- Wilen, W. W., & Kindsvatter, R. Implications of research for effective inservice education. Clearing House, 1978, 51, 392-395.
- Williams, R. J., & Algozzine, B. Differential attitudes toward mainstreaming: An investigation. The Alberta Journal of Educational Research, 1977, 23, 207-211.
- Zigarmi, P., Betz, L., & Jensen, D. Teachers' preferences in and perceptions of inservice education. Educational Leadership, 1977, 34, 545-551.

BIOGRAPHICAL SKETCH

Martha L. McAdams was born in West Helen, Arkansas, on August 19, 1949. She grew up in a small town in Arkansas and graduated from Springdale High School in 1967. She received her bachelor's degree in special education in 1970 with a major in mental retardation.

After graduation, Ms. McAdams taught a class for bilingual educable mentally retarded students in Brownsville, Texas. In 1971, she moved to Houston, Texas, where she taught classes for minimal brain-injured students and attended graduate school at the University of Houston.

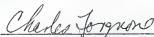
Ms. McAdams returned to her hometown, Springdale, Arkansas, in 1973, where she taught kindergarten classes and a class for educable mentally retarded students. In 1975, Ms. McAdams received a master's degree in special education with a major in learning disabilities and a minor in early childhood from the University of Arkansas. That fall, she became supervisor of special education in Springdale.

In 1976, Ms. McAdams became director of special services in Bentonville, Arkansas. She was responsible for administering the district's special education, Title I and Migrant programs.

Ms. McAdams moved to Gainesville, Florida, in 1978, to attend the University of Florida. She married Hal B. McAdams,

Jr., on October 6, 1979. Their son, David, was born on March 28, 1981. She has conducted over 500 hours of inservice training and is interested in continuing to teach teachers.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



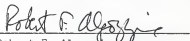
Charles J. Forgnone, Chairman
Professor of Special Education

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Ronald E. Nutter,
Assistant Professor of
Special Education

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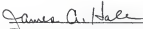
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Professor of Foundations
of Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



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This dissertation was submitted to the Graduate Faculty of the Department of Special Education in the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December 1981

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